



GOVERNOR
BRIAN SCHWEITZER

STATE OF MONTANA

Governor's Executive Budget Fiscal Years 2012 – 2013

Reclamation and Development Grants Program

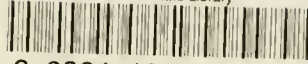
Department of Natural Resources
and Conservation

Conservation and Resource
Development Division



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Reclamation and Development Grants Program

Project Evaluations and Funding Recommendations
For the 2013 Biennium

and

2007 and 2009 Biennium Status Report

Prepared by the

Montana
Department of Natural Resources
and Conservation

Conservation and Resource Development Division
Resource Development Bureau

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LIST OF ABBREVIATIONS

ADA	Americans with Disabilities Act of 1990
AMD	acid mine drainage
AOC	Administrative Order on Consent
ARRA	American Reinvestment and Recovery Act
ASP	aerated static pile
BIA	Bureau of Indian Affairs
BHCD	Big Horn Conservation District
BHR	Big Hole River
BLM	Bureau of Land Management, U.S. Department of the Interior
BLMS	Berg Lumber Mill Site
BMP	Best Management Practices
BOGC	Montana Board of Oil and Gas Conservation
CARDD	Conservation and Resource Development Division
CBM	coalbed methane
CD	conservation district
CECRA	Comprehensive Environmental Cleanup and Responsibility Act of 1989
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CSKT	Confederated Salish & Kootenai Tribes
cy	cubic yards
DOA	Montana Department of Agriculture
DEQ	Montana Department of Environmental Quality
DNRC	Montana Department of Natural Resources and Conservation
DOT	Montana Department of Transportation
DPHHS	Montana Department of Human Health and Services
EA	environmental assessment
EEE/CA	Expanded Engineering Evaluation/Cost Analysis
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
EQIP	Environmental Quality Incentive Program
FBC	Flathead Basin Commission
FEMA	Federal Emergency Management Agency
FWP	Montana Fish, Wildlife and Parks
FY	Fiscal Year
GIS	Geographic Information System
GLWQD	Gallatin Local Water Quality District
HDPE	high-density polyethylene
IWM	Integrated Weed Management
LiDAR	Light Detection and Ranging
LWTP	Landusky Water Treatment Plant
MAFB	Malmstrom Air Force Base
MBMG	Montana Bureau of Mines and Geology
MCA	<i>Montana Code Annotated</i>
MEPA	Montana Environmental Policy Act
MPDES	Montana Pollutant Discharge Elimination System
MSU	Montana State University
MWCB	Mine Waste Cleanup Bureau
NEPA	National Environmental Policy Act
NRIS	Natural Resource Information System
OSM	Office of Surface Mining
PAHs	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PCP	pentachlorophenol

PER	preliminary engineering report
PRB	Powder River Basin
PR NCN.....	Pittman-Robertson National Conservation Need
RCTS.....	Rotating Cylinder Treatment System
RDGP	Reclamation and Development Grants Program
RIT	Resource Indemnity Trust
RRGL.....	Renewable Resource Grant and Loan
SMRWG	St. Mary Rehabilitation Working Group
SRF.....	State Revolving Fund
SSRA.....	State Special Revenue Account
TMDL.....	Total Maximum Daily Load
TU	Trout Unlimited
USACE	U.S. Army Corps of Engineers
USBR.....	U.S. Bureau of Reclamation
USFS	U.S. Forest Service
USFWS.....	U.S. Fish and Wildlife Service
USGS.....	U.S. Geological Survey
VCP	Voluntary Cleanup Plan
WPC	Water Pollution Control
WPPS	Well Plugging Prioritization System
WRDA.....	Water Resources Development Act
YRCDC.....	Yellowstone River Conservation District Council
ZWTP.....	Zortman Water Treatment Plant

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CHAPTER I

Program Description and Procedures

Program Information

The RDGP is a state-funded grant program designed to fund projects that *"indemnify the people of the state for the effects of mineral development on public resources and that meet other crucial state needs serving the public interest and the total environment of the citizens of Montana"* (90-2-1102, MCA). The program, established by the 1987 Montana Legislature, is administered by the DNRC.

In February 2010, DNRC mailed application materials to all Montana communities, counties, the university system, conservation districts, state agencies, state legislators, and others who might benefit by program participation. The application deadline was May 15, 2010. DNRC received 29 applications for RDGP funding totaling over \$7.7 million. These projects are listed alphabetically by applicant on pages v and vi.

Since 1986 233 projects, totaling nearly \$48 million, have been authorized for funding by previous Legislatures. The 1993 Legislature authorized, beginning in state FY 1996, a minimum allocation of \$3 million for grants. In 1993, the Legislature also directed DNRC to give priority to grant requests from the BOGC. This priority is not to exceed \$600,000 for the biennium and does not preclude BOGC from submitting additional grant requests. Additional BOGC grant requests are received and ranked by DNRC in the same manner as all other grant requests. DNRC is also statutorily required to give priority to abandoned mine reclamation projects in the amount of \$800,000 (90-2-1113 [3] MCA). These projects may not include personnel costs or operating expenses.

The 2007 Legislature revised the funding structure of the RDGP by establishing two Natural Resources, SSRA: the Natural Resources Projects SSRA and the Natural Resources Operations SSRA. The Projects SSRA receives revenue to be used exclusively for grants for designated projects authorized in statute. Funds from this account are shared by the RDGP and the RRGL Program. The Natural Resources Operations SSRA funds expenses necessarily incurred in the administration of these two natural resource grant programs. Other related agency expenses are also charged to the operations account. This change in funding structure is designed to ensure that RIT funds are expended consistent with the original intent of the RIT.

The 2009 Legislature approved authorization of \$800,000 in project planning grant funding. Chapter IV describes DNRC's role in the administration of planning grants and lists the 17 projects that were approved for funding.

In 2009, the State of Montana received an infusion of federal funds from the ARRA. The Legislature invested some of these funds in existing state programs that, in turn, freed up state general funds for other programs. The 61st Legislature passed House Bill 645, which transferred \$4,148,796 from the state general fund to the Natural Resources Projects SSRA for RDGP grants. This amount supplemented the \$4,505,797 contributed to the Projects SSRA by the RIT and other resource extraction revenue sources for a total appropriation of \$8,654,593 to fund all eligible resource projects for the 2011 biennium.

The RDGP Act requires that the Governor submit, by the first day of each regular session of the Legislature, a list of all grant proposals received with his or her recommended priorities for funding (Table 1). Administrative rules further provide that DNRC must furnish to the Legislature a status report on previously funded projects (Chapter III). This report is the result of those directives.

Project Eligibility

The following excerpt from the RDGP Act (90-2-1112, MCA) establishes project eligibility criteria:

1. Except as provided under subsection (2), to be eligible for funding under the RDGP, the proposed project must provide benefits in one or more of the following categories:
 - a. Reclamation of land, water, or other resources adversely affected by mineral development;
 - b. Mitigation of damage to public resources caused by mineral development;
 - c. Research, demonstration, or technical assistance to promote the wise use of Montana minerals, including efforts to make processing more environmentally compatible;
 - d. Investigation and remediation of sites where hazardous wastes or regulated substances threaten public health or the environment; and
 - e. Research to assess existing or potential environmental damage resulting from mineral development.
2. If a crucial state need exists to protect Montana's environment, the DNRC may evaluate and the Governor may recommend that the Legislature approve funding for projects in addition to those described in subsection (1).

Applicant Eligibility

Any department, agency, board, commission, or other division of state government or any city, county, or other political subdivision or tribal government within the state may apply for a grant from the RDGP.

Funding Limits

No grant may exceed \$300,000 and there is no minimum funding limit. An applicant proposing more than one project may submit a separate application for each.

Application Review and Ranking Procedures

The grant applications were evaluated for the technical and financial feasibility of the proposed projects, provision of public benefits, need and urgency, and impacts on the environment. Reviewers included staff members of the CARDD of the DNRC, contracted engineering firms, and federal, state, and university personnel with expertise in specific project areas. For each application, project reviewers wrote a descriptive project assessment incorporating their concerns, ideas, and comments.

More funds are requested than are available. Therefore, the department ranks feasible projects, so that it can recommend funding priority and funding level to the Governor and the Legislature. Evaluation criteria established by the 1987 Legislature include, but are not limited to:

1. The degree to which the project will provide benefits in its eligibility category or categories.
2. The degree to which the project will provide public benefits.
3. The degree to which the project will promote, enhance or advance the policies and purposes of the RDGP.
4. The degree to which the project will provide for the conservation of natural resources.
5. The degree of need and urgency for the project.
6. The extent to which the project sponsor or local entity is contributing to the costs of the project or is generating additional non-state funds.
7. The degree to which jobs are created for persons who need job training, receive public assistance, or are chronically unemployed.
8. Any other criteria DNRC considers necessary to carry out the policies and purposes of the RDGP.

Under the ranking system, a proposal could receive 215 points. Specific criteria were established for each category to provide consistency of review. Of the following criteria, public benefits and need and urgency were weighted most heavily.

	<u>Maximum Points</u> <u>Possible</u>
1. Public benefits	90
2. Need and urgency	50
3. Appropriateness of technical design	40
4. Financial feasibility	15
5. Project management organization	<u>2</u>
Total possible points:	215

Recommendations

After ranking the projects and recommending funding, the CARDD made its recommendations to the DNRC director. The director then presented the recommendations by DNRC to the Governor for final ranking of the proposed projects (Table 1), along with funding recommendations.

An appropriations bill listing the Governor's recommendations will be introduced to the 2011 Legislature. By appropriation or other means, the Legislature may approve grants for those projects it finds consistent with the policies and purposes of the RDGP.

The appropriations bill will also contain a request for RDGP planning grant funds. These funds, to be administered by DNRC, can be accessed by local governments statewide to assist in planning and developing local natural resource projects within their jurisdictions.

TABLE 1

RANKING AND FUNDING RECOMMENDATIONS

RANK	APPLICANT	AMOUNT REQUESTED	AMOUNT RECOMMENDED	CUMULATIVE AMOUNT
The first five projects are funded based on statutory requirements (\$6,000,000 to BOGC and \$800,000 for abandoned mine reclamation projects)				
1	MT Board of Oil and Gas 2011 Eastern District Orphaned Well Plug and Abandonment, and Site Restoration	\$300,000	\$300,000	\$300,000
2	MT Board of Oil and Gas 2011 Northern/Eastern District Orphaned Well Plug and Abandonment and Site Restoration	\$300,000	\$300,000	\$600,000
3	Ruby Valley Conservation District Alder Gulch Improvements, Phase 1	\$300,000	\$300,000	\$900,000
4	MT Department of Environmental Quality Forest Rose Mine and Mill Site Reclamation	\$300,000	\$300,000	\$1,200,000
5	MT Department of Environmental Quality Lily/Orphan Boy Mine Reclamation	\$300,000	\$300,000	\$1,500,000
6	Sanders County Managing Aquatic Invasive Plant Species to Protect Montana's Water Resources	\$300,000	\$300,000	\$1,800,000
7	MT Fish, Wildlife and Parks Big Spring Creek PCB Remediation	\$300,000	\$300,000	\$2,100,000
8	MT Department of Natural Resources and Conservation St. Mary and Milk River Basins Water Management Initiatives 2010	\$250,000	\$250,000	\$2,350,000
9	MT Department of Environmental Quality Sand Coulee Public Water Supply System Restoration	\$300,000	\$300,000	\$2,650,000
10	Pondera County Pondera County Oil and Gas Well Plug and Abandon	\$100,000	\$100,000	\$2,750,000
11	Teton County Oil and Gas Well Plug and Abandon	\$60,000	\$60,000	\$2,810,000
12	Fort Peck Tribes Reclamation of the Philip Red Eagle 2-25 Salt Water Disposal Well on the Fort Peck Indian Reservation, Northeastern Montana	\$254,782	\$254,782	\$3,064,782
13	MT Board of Oil and Gas 2011 Southern District Lease Battery Site Restoration, Part 2	\$200,000	\$200,000	\$3,264,782
14	Shelby Reclamation of Shelby Refinery	\$300,000	\$300,000	\$3,564,782
15	Missoula County Ninemile Creek Mining District, Phase 2	\$228,345	\$228,345	\$3,793,127
16	MT Department of Environmental Quality Zortman and Landusky Mines-Source Control Prioritization and Feasibility Evaluation	\$300,000	\$300,000	\$4,093,127
17	Missoula, City of Missoula Sawmill Site Wood Waste Reclamation	\$300,000	\$300,000	\$4,393,127

18	Butte-Silver Bow County Butte Mining District: Reclamation and Protection, Phase 3	\$300,000	\$300,000	\$4,693,127
19	Fergus County Road Department Pentachlorophenol Waste Cleanup	\$300,000	\$300,000	\$4,993,127
20	Meagher County Conservation Thomas Creek Placer Surface Flow Enhancement and Stream Stabilization	\$162,797	\$162,797	\$5,155,924
21	MT Department of Environmental Quality Beal Mountain Mine: Beal Pit Run On Controls, Pond Removals	\$300,000	\$300,000	\$5,455,924
22	Crow Tribe of Indians Little Bighorn River Restoration	\$300,000	\$300,000	\$5,755,924
23	Richland County Conservation District Lower Yellowstone River Bank Stabilization	\$293,078	\$293,078	\$6,049,002
24	MT Department of Environmental Quality Landusky Mine – Construction of Clarifier and Sludge Recycling System for Treatment of Residual Wastewater in Leaching Circuit	\$300,000	\$300,000	\$6,349,002
25	Montana Fish, Wildlife and Parks Impacts of Energy Development and Leasing Stipulations on Mule Deer Habitat Selection, Distribution, and Population Dynamics	\$300,000	\$300,000	\$6,649,002
26	Anaconda-Deer Lodge Anaconda Superfund Reclamation Trail Program	\$300,000	\$300,000	\$6,949,002
	Total	\$6,949,002	\$6,949,002	\$6,949,002
Projects Below This Line Were Not Recommended for Funding				
No Rank	Cascade County Conservation District Whitmore Ravine Erosion Control Project Coordinator	\$253,000	\$0	\$6,949,002
No Rank	Cascade County Conservation District Whitmore Ravine Erosion Control and Storm Drainage, Phase 1	\$300,000	\$0	\$6,949,002
No Rank	Powder River CD Predevelopment Hydrology Determination for the Proposed Otter Creek Coal Mine Within the Regional Framework	\$239,496	\$0	\$6,949,002
	Total	\$7,741,498	\$6,949,002	\$6,949,002

CHAPTER II

Project Evaluations and Recommendations for the 2013 Biennium

This chapter combines summary evaluations of 26 recommended projects presented in the order of their ranking (Part 1). The cumulative amount recommended for these projects is \$6,949,002. The actual amount awarded will depend on the availability of program revenues. To find any particular evaluation quickly, consult the alphabetical listing of projects by the name of the applicant on pages iv and v.

Part 2 contains the projects not recommended for funding.

For projects recommended for RDGP funding, "TOTAL PROJECT COST" is the sum of "OTHER FUNDING SOURCES" plus the "AMOUNT RECOMMENDED".

Part I. Projects Recommended for Funding

Project Nos. 1 & 2

Applicant Name	Montana Board of Oil and Gas Conservation		
Project Names	2011 Eastern District Orphaned Well Plug and Abandonment, and Site Restoration		
	And		
	2011 Northern/Eastern District Orphaned Well Plug and Abandonment, and Site Restoration		
Amount Requested	\$	600,000	
Other Funding Sources	\$	51,140	Applicant
Total Project Cost	\$	651,140	
Amount Recommended	\$	600,000	

Project Summary

This project would properly plug and abandon orphaned oil and gas (bond forfeiture) wells and leaking orphaned abandoned wells, and complete surface reclamation on well sites in eastern and northern Montana.

Public Benefits Assessment

The proper plugging and abandonment of improperly abandoned and orphaned wells benefits all Montanans by eliminating severe impacts to groundwater and surface water caused by oil-field development. Statewide, many abandoned and unplugged wells threaten water supplies used for drinking water, stock water, and irrigation. When the bonded operator is insolvent, the responsibility for prevention of surface, subsurface, and groundwater contamination and damage falls to the BOGC. Imminent safety hazards (for example, spills, open holes, gas emissions, blowout potential) would affect not only humans, but also stock and wildlife, and would result in increased cost of plugging and restoration. Proper plugging eliminates site-specific problems and helps ensure long-term protection of soil, water, and vegetation resources. Moderate economic benefit will be realized by contractors, equipment suppliers, and other area retailers.

Technical Assessment

The priority and funding amount for BOGC applications, 2011 Eastern District and 2011 Northern District, are established pursuant to 90-2-1113(2) (a-c), MCA. For reference, this statute states:

- (2)(a) Subject to the conditions of this part, the department shall give priority to grant requests, not to exceed a total of \$600,000 for the biennium, from the BOGC. The BOGC shall use a grant that received priority under this subsection (2) (a) for oil and gas reclamation projects. The board may use a maximum of 2.5% of the amount of a grant for administrative costs associated with implementing the projects covered in the grant.
- (b) Any unobligated fund balance of a grant that received priority under subsection (2) (a) remaining at the end of the current biennium must be included as part of the \$600,000 limitation for the next biennium.
- (c) The priority given to the BOGC under subsection (2) (a) does not preclude the BOGC from submitting additional grant requests. The department shall evaluate additional grant requests from the BOGC in accordance with the provisions of subsection (1).

These two applications represent 30 wells, in Dawson (one well), Daniels (three wells), Roosevelt (two wells), Sheridan (one well), Toole (16 wells), Fergus (one well), and Fallon (six wells) counties. All have been evaluated using Montana's WPPS. WPPS rates such factors as the threat the well poses to groundwater and surface water, mechanical condition of the wellhead casing, public safety, and potential for cross-contamination of mineral-bearing formations and aquifers. All of these wells are leaking some combination of oil, gas, and/or water to the ground surface or they exhibit loss of mechanical integrity in the wellhead or casing. Delays in proper plugging and abandonment of these wells will result in continued threats to the environment and increased future costs.

The wells are abandoned, and all attempts by BOGC to hold a party responsible for plugging these wells have been unsuccessful. The plugging of these wells involves standard oil-field equipment and procedures and will be performed by qualified oil-field plugging contractors. The project is estimated to take 24 months.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$0	\$31,774	\$ 31,774
Fringe Benefits	\$0	\$4,237	\$4,237
Contracted Services	\$600,000	\$0	\$600,000
Supplies	\$0	\$1,000	\$1,000
Communications	\$0	\$504	\$504
Travel	\$0	\$13,625	\$13,625
Total	\$ 600,000	\$51,140	\$651,140

The two grant applications are for \$300,000 each. Cost estimates are based on bids on past projects contracted by BOGC and are reasonable for the work performed. As with any oil- and- gas-plugging project, unknown or unforeseen circumstances may be encountered underground, and costs may vary considerably.

The 2011 Eastern and 2011 Northern/Eastern applications constitute the BOGC \$600,000 priority allocation for the 2013 biennium.

Environmental Evaluation

No long-term adverse environmental impacts would be created in the plugging and abandonment of the proposed wells, provided reclamation activities are conducted properly. Short-term adverse impacts associated with movement of equipment to the sites are expected. Compacted soil and destroyed vegetation on access routes would be reclaimed upon project completion, and any debris would be hauled off site and disposed of in a licensed landfill. Short-term air pollution (such as dust or emissions from combustion engines) would be minimal, provided that equipment and traffic routes are watered, as necessary, and mechanized equipment is in proper working condition. If the sites involve cleanup and disposal of drilling fluids, oil sludge, brine wastes, or other contaminants, these materials must be identified and characterized. This information must be used to develop site-specific reclamation plans. Depending on the material and contaminants encountered, remedial action may involve burning, burial, landfarming, and addition of soil amendments for materials disposed of onsite, or it may involve hauling materials to a licensed off-site landfill or waste disposal facility. If disposal poses unusual difficulty or necessitates remedial actions not normally implemented by BOGC, appropriate regulatory or reclamation experts would need to be contacted.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

As per the priority contained in 90-2-1113 (2), MCA, a grant of up to \$600,000 is recommended for the 2011 Eastern District and 2011 Northern District projects, contingent upon DNRC approval of the project scope of work and budget.

Project No. 3

Applicant Name	Ruby Valley Conservation District		
Project Name	Alder Gulch Improvements, Phase 1		
Amount Requested	\$	300,000	
Other Funding Sources	\$	20,000	Applicant
	\$	20,000	Montana Heritage Commission
	\$	20,000	Madison County
	\$	10,000	Town of Virginia City
	\$	14,400	Private Landowners
	\$	15,000	HB 223 grant
Total Project Cost	\$	399,400	
Amount Recommended	\$	300,000	

Project Summary

The project addresses dam safety for the Horseshoe Pond and the Kid's Fishing Pond located in Alder Gulch adjacent to Virginia City in Madison County. This project includes removal of the Horseshoe Pond embankment, construction of a steepened channel from Horseshoe Pond to Alder Gulch, construction of a stream channel and floodplain bypassing the Kid's Fishing Pond, road replacement, installation of a concrete box culvert, and embankment rehabilitation at the Kid's Fishing Pond dam.

Public Benefits Assessment

The primary purpose of the project is to address dam safety concerns. The project will prevent public safety concerns related to flooding, protect downstream businesses and infrastructure from flooding related to dam failure, and provide short-term construction jobs.

The project benefits extend beyond the dam safety issues. The riparian landscape along the entire Alder Gulch corridor from Virginia City to the confluence with the Ruby River is littered with large placer tailings piles, remnant ponds, and evidence of historic mining activity and lacks a clearly defined stream channel. Alder Gulch was identified as impaired on the 1996 and 2004 303(d) Lists. The 2004 303(d) List indicated that aquatic life, coldwater fishery, and drinking water are not supported, and primary contact (recreation) is partially supported. A secondary reviewer from FWP indicated that restoration of a stable, functional channel with floodplain will benefit fisheries.

The project is the first step in a long-term plan to improve the riparian corridor and restore portions of the stream channel and floodplain from the Depot Pond to Nevada City. The project removes a portion of the Horseshoe Pond embankment, setting the stage for future stream restoration through the pond, and accomplishes a portion of the planned stream restoration in the Kid's Fishing Pond reach by providing a stream bypass of the pond.

Technical Assessment

The Alder Gulch area near Virginia City has many problems including seepage from the Horseshoe Pond and Kid's Fishing Pond dams, badly corroded culverts, placer tailings piles, remnant ponds, and the lack of a clearly defined stream channel. Corroded culverts are identified as an issue of primary concern,

because they currently allow seepage into pond embankments and compromise the integrity of the dam structures.

The severity of the deficiencies of the Horseshoe Pond embankment was identified in a 2009 DNRC report titled, *Field Investigation of Virginia City Horseshoe Pond Embankment*. The DNRC report describes the embankment deficiencies as "extensive" and further states that complete removal and replacement of the embankment are necessary. The Kid's Fishing Pond embankment also has structural problems and would likely be susceptible to failure should the upstream Horseshoe Pond embankment fail.

Residents of Virginia City, landowners downstream of the pond corridor, and visitors to the area are listed as groups who could potentially be affected by failure of the pond embankments. Consequences of embankment failure could include loss of life, property damage due to flooding, and the transport of sediments containing elevated levels of mercury and other potentially harmful constituents. Natural resources that would likely be negatively impacted as a result of dam failure include topography and soils, vegetation, wildlife, fisheries, water resources and water quality, floodplains, and wetlands.

The primary goals of this project are to improve dam safety, improve road access, and provide flood control in the Horseshoe Pond and Kid's Fishing Pond areas. The alternatives analysis was conducted in two phases. The first phase identified a preferred long term plan to address dam safety and restore the stream channel and floodplain from the Depot Pond to Nevada City.

The entire corridor was segregated into reaches, the Depot Pond, Horseshoe Pond, Kid's Fishing Pond, and Alder Gulch; and five alternatives were developed and evaluated for each reach. The proposed alternatives for each reach were (1) no action; (2) Address Dam Safety (improve or reconstruct pond embankments and outlets); (3) Minor Stream Restoration (improve or reconstruct pond embankments and outlets as well as construct a stream channel with no floodplain); (4) Moderate Stream Restoration (improve or reconstruct pond embankments and outlets as well as construct a stream channel with minimum width of floodplain); and (5) Major Stream Restoration (improve or reconstruct pond embankments and outlets as well as construct a stream channel with floodplain throughout the margins of the gulch). Three potential long term plans were evaluated, and the preferred plan included the following chosen alternatives for each reach:

<u>Reach</u>	<u>Preferred Alternative</u>
Depot Pond	Address Dam Safety
Horseshoe Pond	Major Stream Restoration
Kid's Fishing Pond	Moderate Stream Restoration
Alder Gulch	No Action

The second phase of alternatives analysis identified critical elements of the preferred long-term plan described above that would start to meet the project goals. These elements of the long-term plan were combined and are identified in this application as "Alder Gulch – phase 1 improvements," and are the specific projects for which funds are being requested. The following preferred alternatives comprise the Alder Gulch – phase 1 improvements:

<u>Reach</u>	<u>Preferred Alternative</u>
Depot Pond	No Action
Horseshoe Pond	Remove part of embankment to provide a pond spillway. Construct rock channel to convey water from spillway to Kid's Fishing Pond.
Kid's Fishing Pond	Straighten road by adding fill to existing embankment to improve intersection with highway. Construct new railroad crossing. Cut stream channel and part of future floodplain through downstream end of reach. Install culvert across the straightened road for stream. Culvert and stream will bypass Kid's Fishing Pond during significant flow events.
Alder Gulch	No Action

The preferred alternative primarily addresses dam safety and provides flood control for the Horseshoe Pond and the Kid's Fishing Pond reaches. The chosen alternative is the most cost effective, because it addresses only the primary safety issues, is the first step in a larger scale project, and can stand alone should large scale stream restoration take years to complete.

Dam safety and road access will be addressed by adding fill to the existing embankment at the Kid's Fishing Pond. Flood control will be achieved by constructing a spillway in the Horseshoe Pond embankment and by constructing a stream channel and partial flood plain to bypass the Kid's Fishing Pond during significant flow events.

The project will result in a useful final product by eliminating safety risks associated with the Horseshoe Pond embankment while maintaining the public benefits provided by the Kid's Fishing Pond. The long term restoration project planned for the area will further address environmental issues facing Alder Gulch.

Many government agencies have been contacted throughout the project development, including the USACE, Madison County, DEQ, DOT, DNRC, FWP, Montana Heritage Commission, State Historic Preservation Office, and the Town of Virginia City. Six permits will be required for the project. No permits have yet been obtained; however, permitting will be completed on behalf of the applicant by the chosen contractor prior to startup.

External technical reviews of the project were conducted by an engineer in DNRC's Dam Safety Program and a FWP Fisheries Biologist. The DNRC review noted that replacement of corrugated metal pipes in the Kid's Fishing Pond embankment may need to be addressed immediately in phase 1 improvements rather than in the long term restoration project as the pipes may be at the end of their design life. The FWP review indicated that it is an excellent project that will provide specific fisheries benefits as well as larger natural resources benefits.

The project is scheduled to begin in May 2011 with tasks that include a grant administration workshop, signing a grant contract, and selecting an engineer. Geotechnical, environmental, and topographic data collection and analyses are scheduled to take place in fall 2011. Permitting is scheduled to be complete by February 2012, and final design plans and specifications are scheduled to be completed in April 2012. Construction is scheduled to start in July 2012 and be completed in October 2012. Final project reporting is scheduled to be completed in November 2012.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$23,250	\$17,500	\$40,750
Fringe Benefits	\$3,000	\$2,000	\$5,000
Contracted Services	\$270,000	\$79,400	\$349,400
Supplies	\$250	\$0	\$250
Communications	\$1,500	\$0	\$1,500
Travel	\$1,150	\$500	\$2,000
Miscellaneous	\$500	\$0	\$500
Total	\$300,000	\$99,400	\$399,400

The budget is of sufficient clarity and detail. Costs presented in the application are typical for earthwork projects. Unit costs are generally consistent with those provided in *RS Means Heavy Construction Cost Data, 2009*. Actual unit costs may vary depending on suppliers, equipment, haul distances, or other factors.

The no action alternative is a zero cost alternative; however, it presents considerable risks to public health and safety and the environment. The phase 1 Improvements project is the most cost effective alternative since it includes only the most crucial, safety-related elements of a larger scale restoration project.

Non-state and applicant matching contributions are estimated to total \$64,400. Contributors include the Ruby Valley CD, Madison County, the Town of Virginia City, and private landowners. Matching funds are listed in the application as tentative and the amounts of contributions from outside sources appear to be estimated. The applicant provided copies of letters from these parties in support of the project.

State contributions will be provided by the Montana Heritage Commission and DEQ. A letter from the Montana Heritage Commission dated April 27, 2010 commits an estimated \$15,000 to the project. Not discussed in the letter is a cultural resource inventory, an estimated cost of \$5,000, which, according to the applicant, will also be donated by the Montana Heritage Commission.

The applicant has applied for a \$15,000 HB 223 grant from DEQ to address floodplain delineation. The applicant also proposes that a sediment analysis be conducted at an estimated cost of \$10,000, which may be donated by DEQ. The amounts of matching funds appear to be reasonable estimates, and exact amounts may have been agreed upon subsequent to submitting the application.

The applicant states that fundraising will continue until sufficient funds are realized to implement the project. Additional grant sources will be pursued if this grant and in-kind services are not realized. Potential grant sources listed in the application include the DNRC Renewable Resource Grant, DEQ WPC SRF, USACE WRDA Program, and Community Transportation Enhancement Program (for trails, road, and railroad crossing improvements).

Environmental Evaluation

The phase 1 Improvements project immediately addresses public health and safety by improving dam structures and providing flood control. Phase 1 is part of a long term restoration project that will reduce human health and environmental risks associated with historic mining activity. The adverse environmental impacts associated with this project are short term and associated with the construction portion of the project. The construction impacts are generally associated with fugitive dust emissions and storm water runoff, both of which can be controlled with BMP.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 4

Applicant Name	Montana Department of Environmental Quality
Project Name	Mine Waste Cleanup Bureau Forest Rose Mine and Mill Site Reclamation
Amount Requested	\$ 300,000
Other Funding Source	\$3,141,787 Applicant
	\$ 35,150 Granite County Commission 2010 Planning Grant
	\$ 2,500 Granite County Commission
	\$ 7,500 Clark Fork Coalition
	<u>\$ 5,800</u> Beaverhead-Deerlodge National Forest
Total Project Cost	\$3,492,737
Amount Recommended	\$ 300,000

Project Summary

This project would remove heavy metal contaminated soils, mine tailings and waste rock at the Forest Rose mine and place the wastes into a capped repository. Site surface water would be isolated from contact with contaminant mine wastes. All disturbed areas would be re-graded, top-soiled, and re-vegetated.

Public Benefits Assessment

The Forest Rose Mine is ranked 13th out of 134 mine and mill sites statewide on the DEQ Abandoned Mines Program statewide priority list for cleanup. Reclamation of the Forest Rose Mine site would significantly reduce or eliminate contaminant migration off site and would positively impact Dunkleberg Creek and, ultimately, the Clark Fork River, a public resource. Reclamation of the site contaminants would also allow the site to support native vegetation and wildlife species.

The tailings and waste rock have antimony, arsenic, cadmium, cooper, lead, mercury, and zinc concentrations at least three times the background levels. Dunkleberg Creek in the mine area has elevated concentrations of arsenic, cadmium, copper, lead, and zinc. This project would eliminate the potential of public exposure to heavy-metal contaminated material at the site. The project would also reduce or eliminate hazardous, unstable slopes, waste rock piles, and scattered tailings. In addition, existing and dangerous haul roads would be improved or eliminated. This project would provide direct economic benefits to engineering companies, construction contractors, project material vendors, and their employees. If constructed properly, the benefits of this project would be elimination of potential human and environmental exposure to heavy-metals in soil surface water contamination at the site.

Site reclamation would prevent natural resource damage and property devaluation resulting from the presence of easily accessible, contaminated mines wastes. The project would also protect surrounding property from additional environmental damage due to the migration of mine wastes and other contaminants.

Technical Assessment

This project is in the early stages of planning. The applicant is preparing an EEE/CA that will develop the information necessary to design the project. The mine reclamation is clearly a needed and urgent project. The project goals and objectives are clearly stated. The objectives include removing 95,000 cy of tailings and 21,000 cy of waste rock from the site and confining the material in an on-site repository. The alternative used to provide the estimated cost is based on the preferred alternative for reclaiming other similar sites. However, because it has not yet been fully defined, a site-specific alternative cannot be technically critiqued or financially evaluated. The project will mitigate the environmental impacts of historic mining at the site. However, the full extent of these impacts will not be defined until the EEE/CA is

complete. The project has been coordinated with other government entities including the USFS, the Granite County Commissioners, and the Clark Fork Coalition. No permits are necessary for this project as long as the remedial action is conducted on site.

The project schedule shows the EEE/CA to be completed by winter 2010. The project would be designed in spring 2011 and project construction would begin in summer 2011, to be complete by winter 2011. The schedule seems reasonable. Although the preferred alternative had not been chosen when this grant request was submitted, the EEE/CA will likely ensure the best alternative is chosen.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Contracted Services	\$300,000	\$3,176,937	\$3,476,937
Miscellaneous	\$0	\$15,800	\$15,800
Total	\$300,000	\$3,192,737	\$3,492,737

DEQ will provide the majority of the funding for this project. The preferred alternative has only potentially been selected so the budget is not detailed or definitive.

The unit cost of \$20 per cubic yard for cost item 'Excavate, Haul, Place and Compact Tailings in Repository' shown in Table 1 of the grant application is reasonable, if it is necessary to dewater the tailings. If not, a reasonable cost would likely be in the range of \$10 per cubic yard. The application states that a funding request from the OSM must yet be approved. The approval is anticipated in spring 2011.

Environmental Evaluation

If the project is properly executed, the only negative environmental impacts would be minor, including some dust releases at the site and increased turbidity and sedimentation of the stream during construction and reconstruction of the stream channel. The positive environmental impact is long term. Potential human and environmental exposures to heavy metals at the site and downstream of the site would be reduced by 70% to 100%. All agencies necessary for consultation are involved in the project.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 5

Applicant Name Montana Department of Environmental Quality
Project Name Lilly/Orphan Boy Mine Reclamation

Amount Requested \$ 300,000
Other Funding Sources \$1,235,270 Applicant
Total Project Cost \$1,535,270

Amount Recommended \$ 300,000

Project Summary

The Lilly/Orphan Boy Mine Site is an abandoned hard rock mine in Powell County composed of one and a half acres of land along Telegraph Creek. The site is contaminated by metal mining, principally lead and arsenic, dating from the late 1890s to the early 1950s. The DEQ plans to implement source control, via hydraulic plugging, in conjunction with water treatment, to reduce or eliminate AMD and heavy metals discharge to Telegraph Creek. In addition, approximately 3,430 cy of metal-contaminated soil and sediments will either be removed and disposed of in an on-site or off-site repository or incorporated into the AMD source control reclamation design.

Public Benefits Assessment

General problems at the Lilly/Orphan Boy Mine that could impact human health include elevated concentrations of metals in waste materials, groundwater, surface water, and sediments. Accessing the waste materials may result in significant health-related consequences to the human population as well as to environmental receptors. In order to address those problems, DEQ developed and provided preliminary screening of various reclamation alternatives. The preliminary screening identified presumptive remedies that are suitable for this type of project, but the final selection of a remedial alternative is contingent upon completion of an EEE/CA, scheduled to be completed in fall 2010.

Most of the DEQ mine reclamation construction projects are conducted by local or in state contractors. These contractors often hire or have on-staff local workers who work on the projects. DEQ requires that all contractors pay Davis-Bacon wages to their workers, which are generally better than the usual wage for a similar job. The Lilly/Orphan Boy Mine reclamation project will likely have a positive impact on the local economy due to the employment of construction workers and other items such as fuel that will likely be bought locally.

The benefits to Montanans will be direct and indirect. The direct benefits will be the effects of the removal of contaminated waste and the resulting water quality improvements and employment of local people. The indirect benefit could be the possible economic benefits from increased recreational activities in the area and from the increase in wildlife habitat. The benefits are permanent with the removal of the waste and the reclamation of the land.

Technical Assessment

A phase 1 Reclamation Investigation, completed in 2009, characterized mine waste impacts in solid waste rock, stream sediments, and surface water. The site covers approximately one and one-half acres of impacted land and water including three waste rock piles, one of which spans Telegraph Creek. The waste sources contain elevated levels of heavy metals with lead and arsenic at concentrations that pose a potential threat to human health and the environment. An adit is located at the site and it discharges metal-laden AMD to Telegraph Creek. A phase 2 Reclamation Investigation, focused on providing information needed for source control of the AMD, is scheduled to be completed in summer 2010. The studies completed to date have not adequately defined the contamination for selection of a remedial alternative, but have clearly demonstrated the impacts to natural resources and the severity of the problem.

The need for the project is demonstrated by the results of a DEQ human health and ecologic risk assessment, which showed that lead and arsenic are present at the site at concentrations that pose a potential threat to human health and the environment. The site is currently ranked number 14 of 134 on the DEQ MWCB Hard Rock Mine Site Priority List.

The overall goal of the project is to protect human health and the environment. Specific objectives include limiting human and ecological exposure to mining related contaminants in the soil, sediment, and surface water; and reducing the mobility of those contaminants through solid media, sediment, groundwater, and surface water exposure pathways.

A preferred alternative has not yet been selected, but is expected to be selected in winter 2010 when the EEE/CA is scheduled to be completed. The presumptive preferred alternatives include portal closure, excavation of solid waste and disposal in a constructed repository, underground mine water flow control of AMD using hydraulic plugs, and AMD water treatment. As part of the EEE/CA, the DEQ is planning to inspect the mine workings in summer 2010. The inspection will include dewatering the mine and physically entering it to observe the locations of sulfide minerals and the competency of the bedrock. The information will be used to evaluate the feasibility of various hydraulic control technologies. DEQ has had several mining firms look at the available site data and they have indicated that it is likely that some type of flow control technology will be able to be cost-effectively applied to this project.

The Lilly/Orphan Boy Mine site is on private property that is surrounded by Forest Service land. The DEQ has coordinated with the USFS in the development of this project. The USFS was contacted for a secondary technical review of the grant application. The review indicated that the project addresses a resource need, but the investigation is not far enough along to assess the suitability and cost-effectiveness of the proposed actions. The reclamation work will be performed as a non-time critical removal action in accordance with the CERCLA. No permits are required for CERCLA removal actions conducted entirely on site.

The investigation phase of the project is currently under way. A phase 2 Reclamation Investigation is scheduled to be completed in summer 2010. The investigation will focus on providing information needed for source control of the AMD at the site. The EEE/CA is scheduled for fall/winter 2010 and will include selection of a preferred alternative and a detailed cost estimate of that alternative. Final reclamation project design and bid preparation are scheduled for spring 2011, and construction is scheduled for summer 2011.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Contracted Services	\$300,000	\$1,235,270	\$1,535,270
Total	\$300,000	\$1,235,270	\$1,535,270

No costs for salaries and wages and fringe benefits are included in the application. All DEQ staff salaries, benefits, travel, equipment, and services not related to construction will be paid for by DEQ. RDGP funds would be used for contracted construction services. The costs presented in the application are typical and reasonable costs for this type of work. However, since the final alternative has not been selected, it is not possible to evaluate accurately whether the costs are reasonable for this specific project. Funds totaling \$1,235,270 will be provided entirely by the applicant using federal OSM funds.

Environmental Evaluation

Excavation of the waste rock and disposal in a repository would reduce or eliminate both the quantity of seepage from the waste rock piles and the potential for erosion and exposure of human and environmental receptors. Revegetation would benefit wildlife habitat. Source control of AMD by redirecting adit flow from the mine working before it comes into contact with acid forming materials or AMD treatment would protect surface water from the impacts of AMD.

The adverse environmental impacts associated with this project are short term and associated with the construction portion of the project. The construction impacts include fugitive dust emissions and storm water runoff, both of which can be controlled with BMP.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 6

Applicant Name	Sanders County		
Project Name	Managing Aquatic Invasive Plant Species to Protect Montana's Water Resources		
Amount Requested	\$	300,000	
Other Funding Source	\$	76,800	Applicant
	\$	13,400	MSU Extension
	\$	150,000	Montana Noxious Weed Trust Fund
	\$	76,432	Avista
	\$	5,400	Eurasian Milfoil Task Force (Task Force)
	\$	<u>440,673</u>	DOA
Total Project Cost		\$1,062,705	
Amount Recommended	\$	300,000	

Project Summary

Sanders County seeks assistance to protect Montana's waters from Eurasian watermilfoil, an extremely aggressive, non-native aquatic weed. During summer 2007, Eurasian watermilfoil was found and confirmed in Noxon and Cabinet Gorge reservoirs on the Lower Clark Fork River in western Sanders County, Montana. At the time the grant application was prepared this was the first infestation of Eurasian watermilfoil found in the state. In summer 2010 additional occurrences of Eurasian watermilfoil were confirmed in the Missouri River at Toston and Fort Peck Reservoirs, highlighting the urgency of this project.

Public Benefits Assessment

This grant application addresses a crucial state need to control the infestation of the noxious aquatic weed, Eurasian milfoil, in the Noxon and Cabinet Gorge reservoirs and to prevent its spread to other water bodies in Montana. The project goal is to reduce infestations of Eurasian watermilfoil to a maintenance level. Controlling Eurasian watermilfoil would conserve and protect native wildlife habitat and fisheries. A direct benefit to Montanans from control of Eurasian watermilfoil is protection of recreation resources in the reservoir area. The livelihood of local communities depends on tourism and recreational uses at the reservoirs. The loss of fishing habitat and associated fisheries due to continued infestation would have a dramatic impact on local economies that are based on these natural resources. The IWM approach planned for Cabinet Gorge Reservoir can be applied to new infestations found in Montana. Public safety, health, and welfare are also affected by Eurasian watermilfoil infestation. Recreational users are at risk from drowning if entangled in the thick dense mats of Eurasian watermilfoil. The dense vegetation mats are habitat for mosquitoes that can carry West Nile virus that is harmful to human health.

Once established, Eurasian watermilfoil is extremely difficult to control. The education/awareness and inspection station elements in the proposed project are key factors in stopping the spread of the weed. Other states have spent millions of dollars to reduce existing infestations. Keeping Eurasian watermilfoil contained and eventually eradicated in Cabinet Gorge and Noxon reservoirs by means of herbicide application and other components is an immediate and one-time opportunity.

Technical Assessment

Once introduced into a water body, Eurasian watermilfoil spreads quickly and forms thick beds with dense canopies that crowd out native aquatic plants and threaten water quality, fisheries, drinking and irrigation water supplies, recreational uses and hydroelectric operations. Eurasian watermilfoil spreads extremely rapidly in a water body and is readily transported to other lakes and rivers by boats. Sanders County developed the Task Force upon discovery that the weed was present in Montana. Members of the Task Force include Sanders County Board of Commissioners, Sanders County Weed District, DOA, MSU Extension Services, Avista Utilities, FWP, Noxon-Cabinet Shoreline Coalition, Green Mountain CD, Tri-State Water Quality Council, Weed Management Services, USFS, CSKT, and PPL Montana.

Based on success of controls used in other states with similar infestation, the Task Force has proposed the following five integrated management approaches:

The following IWM tasks are proposed:

Herbicide treatments: Based on research results (other locations and site-specific data) to reduce and control priority areas of existing Eurasian watermilfoil and curlyleaf pondweed stands.

Physical control: Installation of bottom barriers at high-use docks and public ramps during the summer months to reduce the risk of boats transporting weed fragments.

Public awareness and education: Provide information to boaters, anglers and the general public about aquatic noxious weeds and demonstrate specific ways that people can help slow the weeds' expansion.

Prevention: Implement mandatory boat check stations to ensure that Eurasian watermilfoil and other invasive aquatic species are not transported to non-infested areas in Montana.

Monitoring Evaluation: Monitoring the effects of the integrated management program including herbicide applications, bottom barriers, and prevention efforts will be an integral component of the program. The Task Force will work with a Technical Advisory Committee to evaluate results of management efforts and help guide and implement adaptive management. The Technical Advisory Committee will include resource professionals associated with the signatories to the Clark Fork Settlement Agreement. Members may include but are not limited to federal, state and local government agencies, nonprofits, tribes and others with expertise in fisheries biology/ecology, aquatic plant biology/ecology, water resources, water quality and other disciplines to address program components.

Each item was described in detail in the application and a cost breakdown for each task was included with a proposed budget. The grant application provided a section on project alternatives including the proposed project, no action, a single method approach rather than an IWM approach and other alternatives.

Under a no action alternative, Eurasian watermilfoil would continue to grow and expand in Noxon and Cabinet reservoirs and the potential for spread to other waterways in Montana would drastically increase. Aquatic environments in the reservoirs would continue to degrade as invasive plant populations expand. The weeds would very likely spread into adjacent public and private waterbodies that are currently not infested. Over time, the presence of aquatic noxious weeds could change the aquatic environment to the extent that diversity and abundance of native aquatic plants and nearby wetland and/or threatened, endangered or sensitive plant species would be adversely affected through competition for space and nutrients. If left unchecked, aquatic invasive species could degrade water quality by depleting dissolved oxygen needed by fish and other aquatic organisms, and degrade habitat for native fish (especially salmon and trout) due to the potential reduction in spawning habitat. Although a single method of control

would cost less, results in other states clearly indicate that single method control is not effective to achieve sustainable control of weed infestations. A successful long-term management program should be designed to include an integrated approach.

The rationale for selecting the proposed alternative is based on a holistic approach to weed management. Aquatic weed control has been shown to be most effective when addressed with an IWM plan approach. An integrated approach was selected because it uses proven management strategies that, when used in concert, present the most viable and effective option for controlling levels of Eurasian watermilfoil in the reservoirs and reducing the risk that these plants will infest other waters in the state.

The project is considered cost effective when considering the total cost that may be incurred if Eurasian watermilfoil becomes established in other Montana water bodies. The spread and establishment in other waterbodies would require extensive cost to eradicate this weed from other areas.

Support for this project is overwhelming from local agencies, environmental groups, land owners, and private organizations. The following agencies, organizations, local government, and elected officials submitted letters of support included with the grant application: MDA, Avista, Green Mountain CD, Clark Fork Coalition, FBC, Tri-State Water Quality Council, City of Thompson Falls, Noxon Cabinet Shoreline Coalition, Pend Oreille Basin Commission, Representative Pat Ingram, and State Senator Greg Hinkle.

Contacts with state agency representatives included a representative from FWP. Primary concerns are with the length of time that the EA was valid (proposed 10 year period) and concern that monitoring will be completed by the contractor doing the spraying. These concerns were addressed in comments submitted with the FWP agency review of the EA.

Several permits are required for the project. These include authorization from DOA for an Aquatic Vegetation Management Plan for restricted use pesticides, DEQ short term exemption from State Water Quality Standards for pesticide application under a 308 authorization (75-5-308 MCA), MPDES permit, and 318 Authorization for temporary discharge of sediment and turbidity to state waters. A 308 Authorization is required for application for aquatic plant control with herbicides. The DEQ will complete an EA as part of the authorization process. In addition, a permit is required by the USACE under Sections 404 and 10 of the Clean Water Act for the placement of fill in the waters of the U.S. This permit would be required for installation of bottom barriers. This permit was not listed in the grant application, but needs to be included for full compliance with federal regulations.

Financial Assessment

Budget Item	RDGP Grant	Matching Funds	Total
Salaries and Wages	\$3,424	\$65,800	\$69,224
Fringe Benefits	\$1,189	\$16,232	\$17,421
Contracted Services	\$ 295,387	\$680,673	\$976,060
Total	\$300,000	\$762,705	\$1,062,705

The applicant submitted an extensive budget with a detailed breakdown of each task and associated cost for labor, fringe benefits, travel, lodging, equipment, materials and supplies, and contractual expenses. In addition, the application provided the percentage that the RDGP grant will fund for each task. The budget was considered complete with reasonable cost for salaries and consultant wages. The majority of the costs fall within the Contracted Services category. The RDGP grant will primarily be used to fund the contracted services for herbicide applications, mapping, monitoring and evaluations. A small amount will be allocated to Sanders County for grant administration.

Commitments for matching funds have been obtained from several different sources including state and private organizations and companies. These include both in-kind and cash match to fund the IWM plan. If the RDGP Grant funding is not approved, the IWM plan would move forward at a much reduced effort.

Sanders County anticipates that based on the number of acres treated, rate of spread, and acres of retreatment, the project will take three to five years to effectively control the aquatic weed infestation and continued maintenance. Project partners are fully committed to undertaking a maintenance program to treat scattered infestations that could span 10 to 15 years. Sanders County is prepared to seek funds and in-kind support for this long-term IWM approach from federal, state and local agencies and public and private sectors.

Environmental Evaluation

An EA was completed for the proposed dye/herbicide study for the Noxon and Cabinet Gorge reservoirs. This report documents the environmental consequences for both no action and proposed action alternatives for vegetation, threatened, endangered, and sensitive species, water quality, fisheries, wildlife, recreation, soil resources, air quality, and human health.

Based on the results from the EA, the proposed dye/herbicide studies would have some direct short-term effects, but in the long term the activities would have a beneficial effect improving vegetation, water quality, fisheries, and recreation resources.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 7

Applicant Name	Montana Fish, Wildlife and Parks
Project Name	Big Spring Creek Polychlorinated Biphenyls Remediation
Amount Requested	\$ 300,000
Other Funding Sources	<u>\$4,768,388</u> Applicant
Total Project Cost	\$5,068,388
Amount Recommended	\$ 300,000
Project Summary	

Big Spring Creek near Lewistown is impacted with PCB, resulting from transport of PCB-laden paint chips at FWP's Big Spring Fish Hatchery. The project involves removing PCB-laden paint chips from streambed sediments along 2.8 miles of Big Spring Creek, extending from the Big Spring Fish Hatchery downstream to the confluence with the East Fork of Big Spring Creek.

Public Benefits Assessment

Big Spring Creek is a public waterway held in public trust. The Big Spring Creek PCB Remediation project removes hazardous materials from Big Spring Creek, which originates from a first magnitude spring (average discharge more than 100 cubic feet per second) at Big Springs. PCBs are man-made chemicals that have been banned for most uses in the U.S. since 1977. PCBs from paint applied to the Big Spring Fish Hatchery raceways have contaminated Big Spring Creek and led to increased PCB concentrations in fish tissues. Consumption of fish contaminated with PCBs has been correlated with developmental disorders and cognitive defects in children. Current PCB concentrations in fish fillets from Big Spring Creek exceeded the "do not eat" levels recommended by the Sportfish Consumption

Guidelines issued by the DPHHS. Thus, FWP adopted emergency "catch and release" fishing regulations for Big Spring Creek from the hatchery downstream to the Town of Lewistown in 2003.

PCBs in Big Spring Creek were first detected in fish tissue collected below Lewistown in 1981. In 2003, the source of PCBs was identified as marine paints applied to hatchery raceways in the 1960s and 1970s. Remediation work commenced in 2005 and entailed removal of PCB-laden paint from the lower hatchery raceways. Tissue samples from rainbow trout and brown trout showed decreases in PCB concentrations following the 2005 cleanup of the lower hatchery raceways. FWP conducted pilot tests in 2006 and 2009 to determine the best method for removing PCBs from the streambed while minimizing negative impacts to stream channel stability and the surrounding ecosystem. The removal of PCBs from the streambed sediments will beneficially impact aquatic insects, fish, and fish-eating birds and mammals. Through the successful completion of the Big Springs Creek PCB Remediation project, Montanans will again be able to consume fish from Big Spring Creek without fear of chemical contamination. This project will also restore Big Spring Creek to the high quality waterway it once was, and benefit recreationists, surrounding landowners, agricultural producers, and the Lewistown area.

Technical Assessment

PCB contamination in Big Spring Creek is well defined and several agencies have been working to address the problem, including FWP, the DEQ, and the EPA. The hatchery raceways have been identified as the point source of PCBs, while the Big Spring Creek streambed has been identified as a non-point source. The PCB-laden paint has been removed from the hatchery raceways. Within the streambed sediments, PCBs have been detected to a depth of 36 inches, with concentrations exceeding the screening level criteria (0.189 parts per million) detected to a depth of 24 inches. PCB concentrations tend to decrease both with the depth within the sediment and with distance from the two hatcheries. The goals of this project are to reduce PCB concentrations in fish such that human consumption restrictions can be lifted and establish and maintain a healthy and diverse aquatic and riparian ecosystem in and adjacent to Big Spring Creek. The project proposes to remove PCB-impacted fine sediment from the upper six inches of the streambed in the area between the upper fish hatchery and the East Fork of Big Spring Creek. The use of low-impact dredge methods will keep stream habitat intact and reduce the potential for inducing hydraulic instability to the creek.

In 2009, FWP evaluated several alternatives for PCB remediation as part of the Big Spring Creek Feasibility Study (FS) – Fergus County, Montana. The preferred alternative involves partial removal of PCB-impacted sediment from reaches 2A-4B extending from the upper hatchery 2.8 miles downstream to the confluence with the East Fork of Big Spring Creek. Sediments will be removed via hydraulic dredge with disposal at a solid waste landfill. This alternative was approved by EPA on October 14, 2009 following a public comment period. In the preferred alternative, PCB-impacted fine sediment smaller than ¼ inches will be removed from the upper six inches of the streambed. Several other alternatives are less expensive and generally focus on reaches 2A-3A, which is only the upper half of the project area. The most expensive alternatives, which would cost from \$5.4 million to \$12.2 million, would entail complete removal of PCB laden sediments by excavating the streambed to a depth of three feet.

The preferred alternative was chosen because it minimizes channel disturbance and the potential for re-suspension of PCB-laden sediments, while removing the majority of the contamination. During a 2006 pilot test using a suction dredge system, 91% of the PCBs were estimated to have been removed from the streambed down to a depth of five to seven inches. Thus, some PCB-laden sediment will remain within the streambed and its potential impact on the ecosystem is unknown. Measurements of fish tissues and sediment samples following removal of paint from the lower hatchery raceways in 2005 indicated a decrease in PCB concentrations, suggesting that a more extensive clean-up will further reduce PCB concentrations in fish tissues. After this project is completed, post-remediation monitoring will be conducted to determine PCB concentrations in fish tissues. It will take six to eight years for a new generation of fish that have not previously been exposed to pre-remediation PCB concentrations to grow to the appropriate size for sampling to reflect accurate post-remediation PCB concentrations in fish tissue. Monitoring will begin within one year following project completion.

PCB remediation has been ongoing since 2005, when PCB-laden paint was removed from the lower raceways along with several other remediation actions. In 2009, a two-week pilot test dredging project was conducted and several of the required permits were obtained at that time, including a MPDES permit from the DEQ, a 404 permit from the USACE, a 318 permit from the DEQ, and a Fergus County Floodplain Development Permit. In addition to these permits, a Montana Stream Protection Act 124 permit must be obtained from FWP for the implementation of full-scale remediation. The start date for the project depends on project funding, though it is expected that the streambed remediation will be completed by December 2013.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Contracted Services	\$300,000	\$4,768,388	\$5,068,388
Total	\$300,000	\$4,768,388	\$5,068,388

A detailed project budget was provided. The project is in the design phase and the design and bid documents should be completed by July 2010. Available funding is less than the expected cost and the contract cannot be advertised until funding issues are resolved. The grant funds will be used to supplement funding for contracted services for full-scale remediation construction activities. The estimated project cost is between \$4,412,265 and \$5,068,388. Estimated project costs are based on the dredging pilot test completed in October 2009. The cost estimate range depends on the number of dredges and number of seasons, ranging from one dredge operating over three seasons to five dredges operating over one season. FWP will be receiving \$4,000,000 from a lawsuit settlement with the paint manufacturer to apply to remediation costs. However, not all of this settlement money is available for use on the streambed remediation. An estimated \$3,000,000 of the settlement money will be allocated for the streambed remediation, while the remaining funding will come from this grant and other FWP funds.

Environmental Evaluation

The Big Spring Creek PCB remediation project will have positive impacts for the environment over both the short and long term. PCBs found in the creek appear to remain bound in paint chips and mix with the sediment, which are taken up into the bodies of small organisms, fish and other animals that eat aquatic animals. This project will remove the majority of PCBs from the streambed sediment and will decrease the potential of PCB uptake by aquatic organisms, fish and wildlife. As new generations of fish grow, PCBs levels in fish tissue will decrease, further reducing bio-accumulation up the food chain. In addition to the benefits realized by the biotic community, this project is designed to minimize potential negative impacts to stream channel habitat over the short term and maintain channel stability over the long term.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 8

Applicant Name	Montana Department of Natural Resources and Conservation Water Resources Division
Project Name	St. Mary and Milk River Basins Water Management Initiatives 2010
Amount Requested	\$ 250,000
Other Funding Sources	\$ 449,000 Applicant \$ 350,000 USBR <u>\$ 150,000</u> SMRWG
Total Project Cost	\$1,199,000
Amount Recommended	\$ 250,000

Project Summary

This project is a planning and study effort to secure the water supply for irrigation and municipal use in the St. Mary and Milk River basins, to coordinate with other jurisdictions to improve water management in the St. Mary and Milk River basins, to model the hydrology of the St. Mary and Milk River basins, and to evaluate the feasibility of enlarging the current Frenchman Dam project or building a new dam. The project would also provide financial and technical assistance to the SMRWG efforts to rehabilitate and modernize the St. Mary diversion and conveyance works.

Public Benefits Assessment

This planning and study project is considered a crucial state need and will provide important information needed to secure and manage the water supply for irrigation and municipal use in the St. Mary and Milk River basins. This planning and study project supports the efforts to rehabilitate and modernize the St. Mary diversion and conveyance works. Indirect benefits from this project will provide a secure source of water for 18,300 water users, help to improve fisheries in the Milk River and Nelson and Fresno reservoirs, improve wildlife habitat and increase wildlife production, increase recreational use, increase instream flow, improve wetland and riparian habitat, increase water availability at Bowdoin National Wildlife Refuge near Malta, and maintain or improve water quality in the Milk River by supplying good quality water from the St. Mary diversion. The hydrologic model will provide a tool that managers can use to evaluate how various management scenarios or modifications to, or replacements of existing facilities can be used to benefit natural resources, including all the resources identified above. The Frenchman Reservoir feasibility study will address critical safety deficiencies and help identify alternative options to address these deficiencies to improve public health, safety, and welfare.

Rehabilitation of the St. Mary diversion and conveyance works will provide a reliable water source to agricultural and municipal water users in Hill, Blain, Phillips and Valley counties. In addition, the Fort Belknap Water Rights Compact is predicated on the continued viability of the St. Mary diversion and conveyance works. The rehabilitation will benefit an agreement between the State of Montana and Blackfeet Tribe regarding claims for water from the St. Mary and Milk River. A viable St. Mary diversion and conveyance works is required under Article Vi of the Boundary Waters Treaty for the U.S. to retain its share of water from the St. Mary River to Canada. An economic analysis estimated net economic benefits of rehabilitation of the St. Mary diversion and conveyance works to total \$24 to \$39 million each year. The analysis estimated increased revenues of \$172,626 per year if the capacity of Frenchman reservoir is restored. This planning and study project will help the SMRWG rehabilitate and modernized the St. Mary diversion and conveyance works.

Technical Assessment

The St. Mary diversion and conveyance works are nearly 100 years old, have not had major upgrades, and have continued to deteriorate. The application summarizes the planning, study, and coordination needed to help secure the water supply for irrigation and municipal use in the St. Mary and Milk River

basins. Technical aspects of this project include completing a hydrologic modeling study, evaluating the feasibility of enlarging the current Frenchman Dam project or building a new dam, and coordinating the effort to provide financial and technical assistance to the SMRWG efforts to rehabilitate and modernize the St. Mary conveyance and diversion works.

The St. Mary diversion and conveyance works are comprised of several components and annually divert approximately 160,000 acre-feet of water from the St. Mary River to the North Fork of the Milk River. Components include Sherburne Reservoir, Swiftcurrent Creek Dike, St. Mary River diversion dam, St. Mary River siphon, Hall Coulee siphon, check structures, hydraulic drop structures, and an earthen canal. The need for this planning and study project and the ultimate rehabilitation of the St. Mary diversion and conveyance works is well documented and shows that the facilities and structural components are nearly 100 years old and in various states of disrepair and deterioration. The timeline for these necessary studies and reviews is presented in the application.

The application clearly provides the planning and study goals and objectives. The overall objective is to secure the water supply for irrigation and municipal use in the St. Mary and Milk River basins by rehabilitating the St. Mary diversion and conveyance works. The project would improve the management and use of water in the St. Mary and Milk River basins by completing a hydrologic modeling study to enable stakeholders to identify options for meeting increasing water delivery requirements in a changing climate and with an aging infrastructure. One specific study will evaluate the feasibility of enlarging the Frenchman Reservoir or building a new dam in order to store additional water on Frenchman Creek.

Alternatives to the rehabilitation of the St. Mary diversion and conveyance works have been previously explored at length and were adequately referenced in the application. The proposed planning and study project are part of the continuing effort to help rehabilitate the diversion and conveyance structures. The hydrologic modeling, engineering studies, and collaborative efforts included in this project are needed to help minimize the impacts from a potential major failure in one of the structures and the resulting loss of ability to operate the system. Continued diversion of water for the identified uses is critical to several communities and irrigators.

SMRWG Task Force meetings have been held for the last six years with coordination from government agencies including the National Park Service, USBR, State of Montana, Province of Alberta, USGS, Blackfoot Tribe, BIA, Environment Canada, and the cities of Havre, Chinook, and Malta, Montana. The current planning and study project will not require easements, right-of-way agreements, or environmental permits. Environmental impacts associated with the construction and rehabilitation efforts will be addressed in an EIS that will be prepared after the funding has been secured.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$0	\$769,000	\$769,000
Contracted Services	\$221,000	\$150,000	\$371,000
Equipment	\$1,200	\$20,000	\$21,200
Supplies	\$1,300	\$0	\$1,300
Travel & Miscellaneous	\$26,500	\$10,000	\$36,500
Total	\$250,000	\$949,000	\$1,199,000

The application clearly defined the overall budget and breakdown of costs between the major tasks (goals). The RDGP grant would be used primarily to procure contracted services and coordinate travel and other small miscellaneous expenses. The contracted services would include \$50,000 to help provide fiscal and administrative support services to the SMRWG to conduct public outreach and take the steps necessary to create a Regional Resource Authority. Approximately \$36,000 of the RDGP grant would be used to procure a contractor to help develop the hydrologic model and \$100,000 would be used to hire a contractor to complete the Frenchman Reservoir feasibility study. Matching funds and in-kind contributions are described and include \$350,000 in-kind contributions from the USBR and \$150,000 in-kind and cash contributions from the SMRWG. The matching funds appear to be secured based on past

history of the Working Group and the Memorandum of Agreement with the USBR (attached to the RDGP application – Appendix C). This phase of planning and studies is very important in SMRWG's future plans to secure approximately \$153 million from Congress to pay for the rehabilitation of the St. Mary diversion and conveyance works.

Environmental Evaluation

There will be no environmental impacts from completing this planning and study phase of the St. Mary and Milk River Basins Water Management project. Environmental impacts and their significance will be evaluated at a later time through the completion of an EIS for the actual rehabilitation and construction alternatives.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$250,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 9

Applicant Name	Montana Department of Environmental Quality Mine Waste Cleanup Bureau
Project Name	Sand Coulee Public Water Supply System Restoration
Amount Requested	\$ 300,000
Other Funding Sources	<u>\$1,966,284</u> Applicant
Total Project Cost	\$2,266,284
Amount Recommended	\$ 300,000

Project Summary

The Sand Coulee Public Water Supply System Restoration project proposes to replace the current water supply system that has been impacted by historic coal mining in the area. The current system does not meet state and federal regulations for water supply or fire code and future contamination by coal and coal waste is likely. The grant would assist in funding the construction phase of this project.

Public Benefits Assessment

This project will repair or replace the current water supply system that has been adversely affected by historical coal mining. The water supply system has been impacted by open mine workings draining water from the formation used by the system. Some of the system's piping has been placed in areas filled with coal waste and approximately 20 sampling events have detected coliform bacteria in the system. A proposed water supply system will meet all state and federal requirements and will provide adequate water capacity for emergency conditions such as fire fighting. This project may also foster economic development by the presence of a reliable source of potable water and an appropriate amount of water in storage. The construction and installation of this system will be done by local or in-state contractors. This project will likely have a positive impact on the local economy due to local employment and the local purchase of other items such as fuel and supplies.

Technical Assessment

The current water supply system is unsafe and unreliable. The system provides an insufficient quantity of water and has been impacted by mine waste. Surface water in the area is heavily contaminated with AMD. There are 29 abandoned mines sites within one mile of Sand Coulee. The water wells currently used by the Sand Coulee Water District are located above the coal deposits in the Kootenai Formation. Because this aquifer is above the mine workings, it has not been impacted by AMD. However, the mine workings have provided a drainage network which dewateres the Kootenai Formation. In addition, portions of the water distribution system are located in areas filled with coal waste. Inspections of the water line have confirmed that the piping has accumulated granular coal and coal waste materials. The presence of coal and coal wastes poses a potential risk to human health because coal contains numerous PAHs. The presence of coal also supports bacteria growth. PAHs have not yet been identified in the water supply system however, coliform bacteria have been detected.

A water supply evaluation is currently being conducted to evaluate the scaling/incrustation problem in the existing water supply wells and identify and screen alternatives for increasing the long-term yield and reliability of the public water supply system. A preferred alternative will be selected and an associated cost/benefit analysis will be completed during the water supply evaluation. The preferred alternative likely will be the development of a new water supply source and the repair and replacement of the current infrastructure. The applicant requests grant funding for construction of the new water supply source and updating the infrastructure after the water supply evaluation and cost/benefit analysis are complete.

The project will result in a reliable, safe water supply for the community. The project has been coordinated with the appropriate government agencies, but no permits have been obtained. The project will begin in fall 2010 and be finished in summer 2011. This schedule is reasonable. No additional information is necessary at this time and adequate documentation is provided.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Contracted Services	\$300,000	\$1,996,284	\$2,296,284
Total	\$300,000	\$1,996,284	\$2,296,284

The budget for the proposed work is reasonable. The project is large and expensive for such a small community. The matching funds have not been secured, but will be requested from the OSM. If approved, OSM would grant funding in spring 2011. If the funding is not granted, it is doubtful the project will continue. The applicant proposes to obtain the majority of the funding for the project from other sources. The Reclamation Development and Grants Program (RDGP) funds would be used for construction costs.

Environmental Evaluation

Once the preferred alternative is chosen, DEQ will complete an EA per the requirements of the NEPA and MEPA. The EA will identify and assess the restoration alternatives, the environmental impacts of the proposed action and alternatives, and identify any potential impacts to cultural and biologic resources.

The positive impact of this project is the development of a new and reliable water supply for the community. A potential negative impact would be public exposure to mine wastes, if wastes are uncovered during construction. A contingency plan for this scenario would mitigate these concerns. The other negative impact would be a scenario in which there was a fire in the community while the water was shut off. This could be mitigated by having a full water truck and pump on site at all times and personnel or citizens trained to use them to fight fires.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 10

Applicant Name	Pondera County
Project Name	Pondera County Oil and Gas Well Plug and Abandon
Amount Requested	\$ 100,000
Other Funding Sources	\$ 2,215 Applicant
	\$ <u>70,000</u> Oil and Gas Producers
Total Project Cost	\$ 172,215
Amount Recommended	\$ 100,000

Project Summary

The BOGC lists 257 stripper and/or non-productive oil and gas wells as shut in, abandoned, or temporarily abandoned in oilfields throughout Pondera County. The majority of these wells need proper plugging and abandoning. The project will provide cost sharing assistance to small oil and gas producers for plugging and abandoning non-productive wells.

Public Benefits Assessment

Over time, wells can deteriorate and release water that is high in total dissolved solids and oil residue that impact soil, surface water, and groundwater. The wells can also release hydrogen sulfide gas to the atmosphere, resulting in noxious odors and health threats. Plugging of the wells will conserve natural resources by preventing seepage that can contaminate air, water, and soil. The project will allow local farmers and ranchers to use land that was previously inaccessible or unusable due to the presence of well heads and equipment. The funding will go towards reimbursing local producers for well capping activities and create jobs for local companies. Plugging or abandoning non-productive wells will reduce the risk of contamination to air, water, and soil while providing financial assistance to oil and gas producers.

Technical Assessment

Pondera County has approximately 257 non-productive oil and gas wells in need of plugging. Many of these wells were drilled prior to the establishment of the BOGC and regulations governing well and field spacing. In some cases, wells are now experiencing mechanical problems which can potentially release contamination to aquifers, ground surface areas, and the atmosphere. The only viable alternative to resolve the threats from the wells is to properly plug them. This is a common procedure for oil and gas wells.

The BOGC and BLM have developed procedures and standards for well plugging and the producers must follow those procedures to be eligible for funding under this program. A BOGC inspector or BLM will conduct field inspections, witness plugging, and approve restoration. These actions will ensure the technical effectiveness of this proposal.

To be eligible for the cost share program, producers must be in good standing with the BOGC, BLM, and DNRC and not be involved in any court adjudication process that would affect ownership or liability. Wells in need of plugging will be ranked based on the size of the producer (smaller producers score higher), the age of nonproductive wells, and on recommendations by the BOGC. The applicant identified 42 wells that producers have committed to plug or abandon and stated that this number will likely increase if funding is approved. Either BOGC or BLM staff will oversee plugging and surface restoration for any wells located on a state or federal lease. The project is anticipated to be completed within 24 months of procuring the funding.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$270	\$20,570	\$20,840
Contracted Services	\$99,550	\$0	\$99,550
Equipment	\$0	\$30,100	\$30,100
Supplies	\$30	\$20,222	\$20,252
Communications	\$50	\$96	\$146
Travel	\$100	\$100	\$200
Rent and Utilities	\$0	\$384	\$384
Miscellaneous	\$0	\$743	\$743
Total	\$100,000	\$72,215	\$172,215

Over 99% of the requested RDGP funds will go towards reimbursement of producers' costs in the plugging of abandoned and shut-in wells. The cost estimate was based on historical well plugging costs obtained from the BOGC. Of the approximately \$72,000 in matching funds, \$70,000 will be provided by oil and gas producers participating in the program. Producers provided letters of support for the program, which indicates that the matching funds would be available. A similar program was implemented by Teton and Pondera counties in 2006 through 2008, during which time a total of \$150,000 was provided to oil producers as partial reimbursement for well plugging.

Environmental Evaluation

Plugging or abandoning non-productive wells will reduce the risks of surface and subsurface contamination posed by leaking oil or gas wells. The project should not result in any adverse impacts to the environment. The project will be executed following current BOGC and/or BLM well plugging requirements.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon DNRC approval of the project scope of work, administration, budget, and funding package. DNRC also recommends that upon project completion, documentation be provided that the assistance was provided to older wells and smaller producers.

Project No. 11

Applicant Name	Teton County		
Project Name	Oil and Gas Well Plug and Abandon		
Amount Requested	\$ 60,000		
Other Funding Sources	\$ 2,215	Applicant	
	\$ 10,000	Producer Labor	
	<u>\$ 25,000</u>	Producer Equipment	
Total Project Cost	\$ 97,215		
Amount Recommended	\$ 60,000		

Project Summary

This project would provide cost sharing assistance to small oil and gas producers in Teton County for plugging and abandoning of non-productive or abandoned wells.

Public Benefits Assessment

Abandoned and nonproducing wells that are not properly plugged can pollute groundwater aquifers, ground surface areas, and the atmosphere. Assisting small operators to plug and abandon these wells mitigates the possibility of this pollution and will protect the environment in the long term. Resources that would be protected include: (1) groundwater aquifers: cross contamination between aquifers will not occur, (2) oil and gas reserves: cross contamination would not occur, (3) Vegetation: will not be killed by alkaline water and oil residue, (4) wildlife: will not come into contact with contaminated waters. Economic benefits include giving the small operators flexibility and ability to reinvest their bonds so that they can stay in business. Farmers and ranchers will be able to use land that is now inaccessible due to well heads and equipment. Small operators may be more likely to stay in business and create jobs.

Technical Assessment

Teton County has about 127 wells that need plugging. As the casing ages, corrosion leaves holes that can allow contaminants to enter or exit the casing. This can allow cross contamination between aquifers and waste oil and gas reserves. These wells are non-productive and do not contribute to the local economy. Many were drilled before the establishment of the BOGC and regulations governing well and field spacing. The wells will continue to risk contaminating the environment until they are plugged properly. The main goal of this project is to reduce the number of non-productive wells in the oils fields of Teton County.

Teton County will conduct a needs assessment, determine which wells are eligible for participation in the program, and determine funding levels. Older wells, those drilled in the 1920s, 30s and 40s, will receive first priority for plugging. Small producers will be given first preference. Teton County will coordinate well plugging procedures and keep project records. Grant participants (well owners) will plug the wells and restore the land surface. At the time of the project application, Teton County had firm commitment to plug 16 wells, but expected more producers to sign up. The requested funding would be enough to plug approximately 19 wells with an average depth of 3,000 feet and an average cost of \$5,000 per well. No more than \$20,000 in grant funds will go to any one producer. Grant participants will acquire approvals from BOGC and BLM to plug and abandon the wells. BOGC and BLM field inspectors will oversee the plugging and approve of the site restoration. The project will take approximately 24 months to complete.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$270	\$10,570	\$ 10,840
Fringe Benefits	\$ 0	\$ 0	\$ 0
Contracted Services	\$59,550	\$0	\$59,550
Supplies	\$30	\$222	\$252
Communications	\$50	\$96	\$146
Travel	\$100	\$100	\$200
Rent & Utilities	\$0	\$384	\$384
Equipment	\$0	\$25,100	\$25,100
Miscellaneous	\$0	\$743	\$743
Total	\$ 60,000	\$37,215	\$97,215

The grant will fund \$1.60 per foot of plug back depth for oil and gas wells, \$2.00 per foot of plug back depth if surface restoration is needed, and \$1.25 per foot for injection wells. These figures are based on oil and gas industry standards and are reasonable plugging costs. If the wells are not plugged and contamination occurs, the costs for plugging these same wells would be substantially more. The applicant will contribute \$2,214 to the project. Grant participants will contribute \$35,000 in matching funds by contributing labor and equipment for well plugging.

Environmental Evaluation

No long-term environmental impacts would be created by plugging and abandoning old wells, if reclamation is conducted properly. Short-term adverse impacts associated with site construction would be expected and could be mitigated.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$60,000 upon DNRC approval of the project scope of work, administration, budget, and funding package. DNRC also recommends that upon project completion, documentation be provided that the assistance was provided to older wells and smaller producers.

Project No. 12

Applicant Name Fort Peck Assiniboine and Sioux Tribes
Project Name Reclamation of the Philip Red Eagle 2-25 Salt Water Disposal Well on the Fort Peck Indian Reservation, Northeastern Montana

Amount Requested \$ 254,782
Other Funding Sources \$ 7,464 Applicant
\$ 5,313 BIA Bond
\$ 5,000 EPA Bond
Total Project Cost \$ 272,559

Amount Recommended \$ 254,782

Project Summary

This project would reclaim the Philip Red Eagle 2-25 salt water disposal injection well site and plug and abandon the injection well.

Public Benefits Assessment

Fluids in the pits contain high salt, hydrocarbon residual, barium, arsenic and lead. Plugging of this compromised injection well and reclamation of the surface pits would eliminate the potential for surface water or groundwater contamination from leaking fluids and additional property damage. Surface soils would also be protected. Wildlife would be protected from contact. Human health and safety would be improved from the reclamation by eliminating possibility of dermal contact with the heavy metals in the soils and wastewater. Some local contractors may benefit from working on this project.

Technical Assessment

The Philip Red Eagle 2-25 salt water disposal well is located in the Tule Creek oilfield on the central part of the Fort Peck Indian Reservation. In addition to the well, two earthen pits and one cement pit, two steel tanks, five fiberglass tanks, a well house, a motor, 12,000 yards of contaminated soil, and miscellaneous debris are present on the site. A mechanical integrity test on the well in 2008 failed.

The project has two main goals: to protect underground sources of drinking water and protect surface waters from contamination due to runoff from surface features at the site. The well will be properly plugged and abandoned. The waste fluids from pits and tanks will be disposed of properly. The pits will be reclaimed, all solid waste will be removed, and, the site will be re-vegetated. The secondary reviewer stated that based on the test hole size, the estimated cement volume to plug may need to be increased by up to 25%. The project would start in July 2011 and be completed by June 2012.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$0	\$5,363	\$ 5,363
Fringe Benefits	\$ 0	\$1,351	\$1,351
Contracted Services	\$254,782	\$10,313	\$265,095
Communications	\$0	\$750	\$750
Total	\$ 254,782	\$17,777	\$272,559

The grant funds requested would be used to hire a contractor to reclaim the site and dispose of waste from the site. Costs were calculated using the actual size of the pits, fluids types and amounts, proposed plugging plan, and surface reclamation. The cost estimate did not include the costs of a hot oiler, if it is needed to heat the oil to remove it from the tanks and pits. If fuel costs increase, the cost to plug the well

would also increase. A detailed breakdown of how the costs were derived was provided. The Tribe will provide in-kind support for the project. Outside funding is from bonds held by the BIA and the EPA.

Environmental Evaluation

No long-term adverse environmental impacts should be created in the plugging and abandonment of the well and pits, provided reclamation activities are conducted properly. Short-term adverse impacts associated with movement of construction equipment to the site are expected.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$254,782 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 13

Applicant Name	Montana Board of Oil and Gas Conservation
Project Name	2011 Southern District Lease Battery Site Restoration, Part 2

Amount Requested	\$ 200,000
Other Funding Sources	\$ <u>4,951</u> Applicant
Total Project Cost	\$ 204,951

Amount Recommended	\$ 200,000
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Project Summary

This project would provide additional funding to complete site restoration of the orphaned improperly-abandoned tank battery facility in Musselshell County that was funded in 2007.

Public Benefits Assessment

The primary benefit of this project would be to complete reclamation of an orphaned site with extensive contamination. The benefits will largely accrue to the landowner of the affected property, but Montanans all benefit indirectly from the reduction of hazards at the site. Environmental benefits include elimination of potential ground and surface water contamination from leaking hydrocarbons. Indirect benefits would be realized by the public since wildlife habitat, soil, vegetation and aesthetics would be improved in the area.

Technical Assessment

Cleanup of this property was funded by the 2007 Legislature. Under the 2007 Southern District project, all of the buried crushed tanks, treaters, and the majority of the piping were dug up and removed. The contractor constructed a land farm and 6,600 cy of contaminated soils are being remediated. Based on information from the existing excavated pit and test pits dug around the perimeter, the current estimate is that an additional 9,000 cy of material are contaminated and need to be excavated and remediated. Work that remains to be done is (1) to excavate the 9,000 cy of contaminated soil, steel piping, and wood, (2) to remediate the contaminated soil in the landfarm, and (3) to properly dispose of the steel piping and wood. The presently contaminated soil can be used to backfill the pit after remediation. The pit will be recontoured to its previous grade and reseeded to native vegetation. The project is estimated to take 24 months.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$0	\$2,899	\$ 2,899
Fringe Benefits	\$0	\$422	\$422
Contracted Services	\$200,000	\$0	\$200,000
Supplies	\$0	\$100	\$100
Communications	\$0	\$40	\$40
Travel	\$0	\$1,490	\$1,490
Total	\$ 200,000	\$4,951	\$204,951

Costs to complete this reclamation work were calculated based on the existing contract to excavate, land farm, sample, and remediate the contaminated soil at the site at a rate of \$31 per cubic yard. The BOGC plans to use remaining funds from the 2007 appropriation together with this grant to complete the site restoration.

Environmental Evaluation

Short-term adverse impacts would be expected during this construction project. Plant and soil disruption, increased noise, and dust can be mitigated to acceptable levels during construction phase. Long-term adverse impacts will depend on the landfarm's success in degrading soil contamination and containing it on site.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$200,000 upon DNRC approval of the project scope of work, administration, budget and funding package.

Project No. 14

Applicant Name Shelby, City of
Project Name Reclamation of Shelby Refinery

Amount Requested \$ 300,000
Other Funding Sources \$ 218,950 Applicant
Total Project Cost \$ 518,950

Amount Recommended \$ 300,000

Project Summary

The project is a continuation of a previously funded project for excavation and off-site disposal of petroleum-contaminated soils at an abandoned oil refinery in Shelby.

Public Benefits Assessment

The City of Shelby has identified elevated concentrations of petroleum constituents on a vacant site that was the location of an oil refinery. Shelby previously has excavated and disposed of 38,358 tons of petroleum-contaminated soils. During that work, an additional estimated 7,500 cy of contaminated soils were encountered. Currently, the city owns the vacant site. The site is fenced and public access is

limited. The city would like to re-develop the property into an industrial park, but must first resolve the contaminant issues. Cleanup and re-development would repair and/or mitigate environmental damage. The property would be returned to beneficial use and provide tax revenue and jobs. The project benefits are long term because the contaminant source and most of the soil contamination would be removed. Contamination that is 12 feet below the ground surface, or deeper, will not be removed because the soils are unstable. Therefore, degradation of groundwater will still be possible. The project is needed, but not urgent, except to potential businesses interested in re-locating to the new industrial park

Technical Assessment

The applicant requested funds to clean up petroleum-contaminated soils at the site of an abandoned oil refinery in Shelby. The site is listed under the State CECRA and is being cleaned up under the VCP. During the first project phase, additional contaminated soils were found. The grant proposal is for excavation and off-site disposal of the additional petroleum-contaminated soils. The natural resources affected are soil and groundwater. The project objectives are to eliminate risks to industrial and construction workers and to prevent degradation of groundwater.

The preferred alternative was chosen by evaluating each alternative according to the CECRA evaluation factors, including long-term reliability and effectiveness, reduction of toxicity, mobility, and volume, short-term effectiveness, ability to implement, cost effectiveness, and protectiveness. The city proposed excavation and off-site disposal of the petroleum-contaminated soil because the alternative is the most protective; has the best long-term and short-term reliability; provides the greatest reduction of toxicity, mobility, and volume of contaminants; and, is compatible with future plans for the site. However, it is also the most costly alternative.

The project objectives of limiting human health risks and preventing degradation of groundwater are attainable. However, leaving some contamination in place deeper than 12 feet may not prevent groundwater degradation. The project will result in a cleaner site that can be re-developed, providing additional tax base and jobs for the community.

The DEQ will oversee the project. Work will commence upon allocation of grant funds. Shelby will develop health and safety plans and quality assurance plans and submit the plans to DEQ and to the EPA for review. Upon final approval of the work plans, approximately 45 days, the remedial design will begin and the construction bid will be prepared. This step is estimated to require an additional 30 days. Remedial construction will commence and is estimated at 45 days. Shelby will prepare and submit the final construction report within 90 days of the completion of construction. After DEQ and EPA make a no further action determination, site demobilization will be completed within 30 days. The proposed schedule is reasonable and adequate for the project.

DEQ requires an addendum to the VCP plan, but it should not delay construction activities. The VCP plan addendum was to be submitted as an addendum to the grant application, but was not available for review.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salary and Wages	\$0	\$4,000	\$4,000
Fringe Benefits	\$0	\$1,000	\$1,000
Contract Services	300,000	\$0	\$300,000
Supplies	\$0	\$37,500	\$37,500
Communications	\$0	\$200	\$200
Miscellaneous	\$0	\$176,250	\$176,250
Total	\$300,000	\$218,950	\$518,950

The applicant provided the project budget summary form and an additional spreadsheet that detailed proposed construction material and labor costs. No budget or funding irregularities were noted and the overall project costs appeared to be reasonable. Soil excavation, transport and backfilling costs may be less than estimated due to the current economic climate. Shelby will provide in-kind services and that match is secure. The in-kind services are 42% of the total project cost. The applicant did not submit an alternate plan, other than the RDGP funding.

Environmental Evaluation

Environmental impacts associated with this project were reviewed and, with the exception of a minor temporary adverse demand on government services and a minor increase in traffic from redevelopment of the property, no apparent adverse impacts will result due to the proposed activities. The beneficial results from this project are primarily related to human health and safety, economic development and remediation of soil and water resources.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget and funding package.

Project No. 15

Applicant Name	Missoula County		
Project Name	Ninemile Creek Mining District, Phase 2		
Amount Requested	\$ 228,345		
Other Funding Sources	\$ 38,184	Applicant	
	\$ 62,000	TU	
	\$ 57,800	USFS	
Total Project Cost	\$ 386,329		
Amount Recommended	\$ 228,345		

Project Summary

Phase 2 of the Ninemile Creek reclamation project will reclaim the placer-mined Twin Creek floodplain and creek channel. Funds will also be used to collect the design information and prepare a design for Reach 2 of the Housum Placer along Ninemile Creek.

Public Benefits Assessment

The project will design and implement the re-routing of placer-mined Twin Creek to create a more natural stream bed with rills and pools. The dredge spoil will be graded to blend with site topography to create a floodplain. Public benefits include: (1) improving water quality by reducing sedimentation and stream temperature, (2) improving public safety by reducing or eliminating steep unstable slopes, (3) improving the functionality of the floodplain which may reduce the effects of flooding, (4) allowing for fish passage by removal of barriers, (5) improving fish and wildlife habitat, (6) improving public fishing and hunting by increasing fish and wildlife numbers, and (7) public education by including public involvement in weed control, revegetation, and monitoring activities.

The application also requests funds for the collection of data, survey, and design measurements for Reach 2 of the Housum Placer. The gathered information will be used to develop reclamation alternatives and, potentially, the reclamation design.

The project will create short-term employment for construction workers and engineers; and the final benefits of reclamation will be certain and long term. The project is part of a larger long term effort to reclaim Ninemile Creek and tributaries. Without funding, the efforts to reclaim Ninemile Creek will stop.

Technical Assessment

Ninemile Creek and tributaries were placer mined from the 1870s to the 1940s. The Twin Creek project is part of a larger effort to reclaim placer mining impacts in Ninemile Creek. The general strategy is to start at the headwaters of Ninemile Creek and work downstream as funding is available. The project is a cooperative effort of Missoula County, TU, and the USFS. Two mines in the Ninemile drainage have been reclaimed and two more will be reclaimed during summer 2010. The amount of stream and floodplain to be reclaimed at a given time are determined by the size of potential grant funding options. The project goals are to protect water quality and reclaim mining impacts on Twin Creek and to create a design and plan to protect water quality and reclaim mining impacts on main stem Ninemile Creek.

The application describes the site features that disrupt stream flow in Twin Creek and contribute to increased sedimentation and decreased connectivity of Twin Creek to Ninemile Creek. The preferred alternative is to restore 1,000 feet of Twin Creek stream channel, remove or regrade 12,000 cy of dredge spoil, and revegetate five acres of disturbed land. The preferred alternative is a cost effective approach that eliminates the need to remove dredge spoil from the site or to import soil to the site. Reconstruction of the Twin Creek stream channel and associated floodplain will remove the structural issues with the stream channel and floodplain. The project is scheduled to begin with design work in winter 2011 and conclude with construction in summer 2012. The project will result in the stabilization and restored functionality of Twin Creek. The full benefits of the reclamation will not occur until the sedimentation and stream connectivity issues in Ninemile Creek (Housum Placer) have been corrected. Additional funding will be required to complete the entire project.

The Twin Creek project is on public land; the Housum Placer is on private land. The application does not describe provisions for preventing new placer mining operations in the future. The reclamation work could be undone if a small miner dredges Twin Creek.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$4,500	\$49,780	\$54,280
Contracted Services	\$4,300	\$99,204	\$303,504
Supplies	\$10,475	\$0	\$10,475
Miscellaneous	\$9,070	\$9,000	\$18,070
Total	\$228,345	\$157,984	\$386,329

Preparation of the final design for the Twin Creek reclamation project is part of this grant application. Without the final design, accurate construction costs cannot be prepared. The application presents a comprehensive list of tasks that will be included in the reclamation and assumptions of the number and unit cost. The unit costs appear to be reasonable. The costs for gathering information and preparing the design for Reach 2 of the Housum Placer are also reasonable.

The matching funding, approximately 41% of the project cost, will be provided by the USFS, Missoula County, and TU. The funding from the USFS and Missoula County depend on budgeting priorities of the agency and the county. The availability of funds from TU is likely based on the success of fund raising. If available matching funds are not available, the scope of the project may be reduced by eliminating the design activities for Reach 2 of the Housum Placer.

Environmental Evaluation

The long term effects of the reclamation projects are positive and include improved stream and floodplain connectivity. The many benefits include improved fish and wildlife habitat, improved water quality, improved recreational opportunities, and potentially reduced flood occurrence and severity.

The short-term environmental impacts are mostly negative and include machinery noise, dust, and increased sedimentation in Twin Creek. Most of the adverse effects are unavoidable. The amount of dust generated during construction could be reduced by routine wetting of the surface. Sedimentation in Twin Creek can be minimized by diverting the creek until the new channel is completely restored.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$228,345 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 16

Applicant Name	Montana Department of Environmental Quality		
Project Name	Zortman and Landusky Mines – Source Control Prioritization and Feasibility Evaluation		
Amount Requested	\$	300,000	
Other Funding Source	\$	19,774	Applicant
	\$	<u>60,000</u>	Outside Sources
Total Project Cost	\$	379,774	
Amount Recommended	\$	300,000	

Project Summary

This project proposes to study the hydrogeology and geochemistry at the Zortman and Landusky mines in Phillips County to define problem areas better. The project will allow DEQ and BLM to control the sources of contamination found at these two mines and adjacent Swift Gulch more efficiently and effectively. Site conditions are changing rapidly, thus making planned remediation and control projects less effective and more costly to implement and operate.

Public Benefits Assessment

Benefits to Montana citizens could be significant, depending on the study results and future remediation efforts. Direct benefits could include improvement of human health and the environment resulting from more efficient treatment of contaminated water. Indirect benefits could include increased recreational opportunities and improved wildlife habitat. This project, in conjunction with future projects, could moderately conserve natural resources by reclaiming mine-waste contaminated water and returning it to streams for traditional in-stream uses. This project will not create long-term jobs for Montanans. Assuming the study results achieve the stated goals, the benefits should be certain and long term. Based on the recent increases in site contamination, this project is necessary and urgent.

Technical Assessment

Rapidly changing water quality, resulting from contaminants located in specific areas of the Zortman and Landusky mine sites, has created water treatment deficiencies and increased treatment costs. Specific characterization of these areas is not available, thus the contamination problems continue to increase. The project need is defined, but approximate number of individuals or amount of acreage affected are not provided. Supporting documents were included with the application.

The project goals are to improve water quality in streams surrounding both mines, while lowering current water treatment costs. The main project objective is to characterize groundwater flow in the area of Swift Gulch and the Landusky Pit complex so that the relative effectiveness of various potential remediation actions can be assessed and appropriate actions implemented. The specific tasks and activities needed to achieve the objectives include (1) update water balance/chemical mass loading; (2) conduct long-term, high-yield pumping tests; (3) conduct long-term tracer test at several points in Swift Gulch; (4) install monitoring flumes in Swift Gulch; (5) perform a groundwater hydrograph analysis; (6) perform a source control feasibility analysis including bench-scale testing; and, (7) prepare a final report containing all of the data generated.

The applicant listed two project alternatives in addition to the selected alternative. Alternative 1 is implementation of current remedial actions even though they may not work given recent changes at the site. Alternative 2 is no action. Based on the analysis, the applicant indicated that the preferred alternative is the only option that will meet project goals and objectives. A discussion on other possible studies or evaluating the project using only portions of the studies would have been useful. The cost-benefit analysis provided little detail with which to compare the project cost to the potential benefits. The alternatives analysis provided minimal information and comparison data for the considered alternatives. The study will use six different characterization tests and report the results of the research and testing. The application lacked some details regarding scientific and research methods, including the criteria that will be used to evaluate project success. However, the engineering firm in charge of this project, and DEQ personnel have conducted many similar studies, and should be able to meet the project requirements.

The proposed project will be coordinated between DEQ and BLM. Both parties have significant experience in remediating this site. Agency staff responsible for this project are known and respected for their remediation expertise and will provide adequate leadership for this project. The project schedule provided adequate detail and the milestones are measurable and achievable. The project will begin as soon as funding becomes available and will continue for approximately 24 months. The target date for completion of the project is August 2013.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salary and Wages	\$0	\$10,595	\$10,595
Fringe Benefits	\$0	\$3,178	\$3,178
Contract Services	\$ 300,000	\$60,000	\$360,000
Travel	\$0	\$2,833	\$2,833
Miscellaneous	\$0	\$3,168	\$3,168
Total	\$300,000	\$79,774	\$379,774

The application stated that grant funds will be used for contracted services. Budget details included (1) \$40,658 to update water balance/chemical mass loading; (2) \$82,471 for long-term, high-yield pumping tests; (3) \$13,600 for Swift Gulch flume installation/monitoring; (4) \$19,310 for tracer tests in Swift Gulch; (5) \$21,503 for a groundwater hydrograph analysis; (6) \$85,380 for source control feasibility analysis/bench-scale testing; and, (7) \$37,077 to write the final report. The budget did not specify materials and services within those categories. Although the proposal lacks that additional detail, the task budgets and unit costs appear reasonable. No funding irregularities were noted. Matching funds from

both the DEQ and BLM appear to be secure. The source of the outside funds was not identified. A backup plan was not discussed if the grant funding is not provided.

Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. The beneficial results are primarily related to the future projects that will use the data acquired during this project to remove or control contaminated, mining-impacted soils that are affecting groundwater and surface water in the area. Minimal short-term construction-related impacts will be controlled through permitting, landowner access permission, and proper construction methodology.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package. Contract language should include specific criteria and deliverables to ensure that the project is completed successfully and provides the necessary information to guide future remediation activities at the mines.

Project No. 17

Applicant Name	Missoula, City of
Project Name	Missoula Sawmill Site Wood Waste Reclamation
Amount Requested	\$ 300,000
Other Funding Sources	\$ 314,200 Applicant
	\$ <u>148,610</u> Millsite Revitalization Project LLC
Total Project Cost	\$ 762,810
Amount Recommended	\$ 300,000

Project Summary

This project proposes to remove buried wood waste from the Missoula Sawmill site and use the removed wood to create a growth medium to reclaim city parks. The buried wood, deposited from about 1910 until 1985, is currently generating methane gas at explosive levels.

Public Benefits Assessment

Benefits to Montana citizens could be significant. Direct benefits will include surface water and groundwater quality improvements; reduced soil contamination; reduced fire risk; increased community landfill life; and, improvements to human health. Indirect benefits could include increased recreational activities, improved wildlife habitat, and an increase in EPA Brownfields funds.

This project would moderately conserve natural resources by reclaiming a current state superfund site and using the waste products as a growth medium for area parks. By removing the wood waste, methane gas would no longer be produced, thus protecting the public safety and health. The level of public benefits may be limited because only a portion of the wood waste is being removed and part of the project will be completed on private land.

This project will not create long-term jobs for Montanans. Assuming the project achieves the stated goals, the benefits should be certain and long term. Based on the documentation submitted in the application and because the site is a Montana Superfund site, this project is needed and urgent.

Technical Assessment

The Missoula Sawmill Site is an EPA funded Brownfields site and a Montana State Superfund site. The site has an estimated 120,000 cy of buried wood waste near the Clark Fork River. The wood chips are decaying and generating methane gas, thus creating fire and human health hazards. The project need is well defined and the approximate number of individuals and amount of acreage affected are provided. In total, 31,000 cy of the material will be removed from the areas actually producing methane. The remaining wood chips are not causing any hazards and will, therefore, not be removed. Many supporting documents from various entities were included with the application.

The project goals are: (1) to abate methane hazards at the Missoula Sawmill Site; (2) to recover the wood material and use it beneficially; (3) to create a growth medium from the wood waste for Missoula to use in parks; and, (4) to reduce use of the sole-source drinking water aquifer for irrigation improving soils at parks. The project will license a large composting facility in the Fort Missoula area, remove 31,000 cy of wood waste from the Missoula Sawmill site by the end of November 2011, begin wood waste composting in September 2011, and process the wood waste into 25,800 cy of compost by the end of June 2013. The specific tasks and activities needed to achieve these objectives were listed and clearly described.

The applicant attached a Wood Waste Reclamation Project Feasibility Study which listed four alternatives to obtain compost for city parks. These included purchase topsoil; purchase topsoil from the company, EKO Compost; produce compost at the city facility at Fort Missoula using the ASP method; and, produce compost at the city facility at Fort Missoula using the windrow method. An in-depth alternative analysis was supplied for each of these alternatives. However, the applicant did not evaluate alternatives to remediate the Missoula Sawmill site. The application should have considered no action and analyzed alternative methods to either remove the wood waste or recover the methane. Based on the information presented, removal of the wood waste may be the best alternative, but a detailed analysis supporting this conclusion was not presented. The applicant indicated that the preferred alternative is the only option to meet project goals and alternatives.

The cost-benefit analysis sufficiently compared the project cost to the potential benefits for the proposal. However, a comparable analysis for the alternatives was minimal. The proposal to produce compost at city facility at Fort Missoula using the ASP method would provide a net benefit of \$620,000 compared the cost to purchase compost.

The proposed project will be coordinated between Missoula and contracted consultants. Both parties have significant experience in dealing with contaminants at this site and with similar projects. The individuals who will be involved in this project appear to be qualified. The project schedule provided adequate detail and measurable and achievable milestones. The project will begin as soon as funding becomes available and will continue for approximately 24 months. The target date for completion of the project is July 2013.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Contract Services	300,000	\$455,327	\$755,327
Equipment	\$0	\$7,483	\$7,483
Total	\$300,000	\$462,810	\$762,810

The application stated that grant funds will be used for contracted services and provided sufficient detail regarding expenditures for materials and services. The grant funds will be used for the following services and materials: \$164,000 for mixing feedstock and placing compost; \$96,256 for performing sampling (216 samples) and monitoring the site; and \$39,744 for screening finished compost. However, the

application did not specify which portion of the grant would be used for which task or what funds would be used for work on private versus public land. According to the applicant, approximately 65% of the wood waste is located on city land and 35% on a private developer's land. The applicant provided a detailed breakdown of costs; there were no budget or funding irregularities, and unit costs appear to be reasonable and adequate. A detailed cost comparison of the alternatives was not provided. Matching funds from both the applicant and the private developer appear to be secure. A backup plan was not discussed if the grant funding is not provided.

Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. The beneficial results are primarily related to the success of the proposed project in removing the wood waste from the site and making a growth medium from the wood waste. Minimal short-term construction-related impacts will be controlled through permitting, landowner access permission, and proper construction practices.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC Approval of the project scope of work, administration, budget, and funding package. Contract language should specify that DNRC funds should not be used for waste removal from private land.

Project No. 18

Applicant Name	Butte-Silver Bow Consolidated City-County Government		
Project Name	Butte Mining District: Reclamation and Protection, Phase 3		
Amount Requested	\$ 300,000		
Other Funding Sources	<u>\$ 84,100</u>	Applicant	
Total Project Cost	\$ 384,100		
Amount Recommended	\$ 300,000		

Project Summary

This project would preserve and restore the physical infrastructure of the Butte historic mine yards. The principal project goal is safe access to nine mine yards and headframes that are located within the Butte historic district. Butte-Silver Bow plans to develop the properties into a Mining Heritage Park. This project is the third phase of the mine yard restoration project.

Public Benefits Assessment

The effects of mineral development on the natural resources in the Butte area are unmistakably evident. Through the Superfund program, much of the Butte mining district has been capped and reclaimed. However, the mine yards, due to their historic nature, were not reclaimed. Complete reclamation would have removed all structures and buildings, including the headframes, and would have resulted in serious degradation of the National Historic Landmark District. Instead, the environmental damage to natural resources from mineral development will be mitigated by preserving and enhancing these historic structures and providing safe, public access to the buildings, headframes and yards. The resulting work will offset adverse impacts by preserving a key era in Montana history, increasing tourism, and promoting economic development in an economically depressed area.

As depicted in the photographs included in the grant application, the work is both necessary and urgent. The unsafe structures are a liability to the county because local teenagers consider it a "rite of passage" to climb the headframes, even though they are fenced and patrolled. The structures require periodic maintenance and several are not receiving the required maintenance because there is no safe access. The mineyards currently are not accessible to the public, which has limited economic development and tourism of these historic structures.

Technical Assessment

This project mitigates environmental impacts from historic mining by repairing the structures and reclaiming land. Abandoned mine and Superfund cleanup programs have reclaimed much of the Butte Mining District. However, the mine yards have not been remediated because such practices would have likely required complete demolition and removal of all historic structures. The applicant requests funding to preserve and restore the physical infrastructure of the historic mine yards in the Butte Mining District. The project would restore and preserve the historic resources and conserve natural resources through xeriscape re-vegetation of mine waste material with native plants. The proposed project will reclaim and protect the historic mine yards, while effectively mitigating all exposures to hazardous materials and safety concerns.

The applicant considered the following three project alternatives: (1) retain public ownership of mine yards and provide necessary protection and enhancement to make them safe for workers and visitors; (2) reclaim natural resources in mine yards to pre-mining environment (complete removal); and, (3) sell or lease the mine yards to private businesses for development and have the developer incur all costs. The applicant presented brief discussions for each alternative and a basis for choosing the preferred alternative.

The project has two main construction tasks that will be performed by licensed contractors. Task 1 will improve headframe stairway safety. The work will include inspection and repair/replacement of deteriorated wood and metal elements of the existing stairs, railings and platforms and re-painting, as needed. To ensure the structures are safe for use by the general public, additional safety upgrades are anticipated, including railing improvements and signage. A structural engineer will be contracted to design necessary improvements. Task 2 will facilitate access and movement of people and vehicles in and around the mine yard sites. The improvements will include filling areas of ground subsidence, improving storm water drainage, hardening driving and walking surfaces with compacted gravel, and installing interpretative and directional signs.

Deliverables for this project will consist of periodic reports completed as part of the tasks/activities. A monitoring plan was presented that details administration and review of activities to ensure that goals are achieved. The cost benefit analysis discussed the value of restoring historic infrastructure and how it will beneficially impact the local and state economy. Local organizations, residents, and government officials provided additional supporting documents. The staffing and administration of the project were clearly stated, outlining each person and their respective title and responsibility, along with project coordination.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salary and Wages	\$0	\$30,760	\$30,760
Fringe Benefits	\$0	\$11,074	\$11,074
Contract Services	\$280,000	\$17,399	\$297,399
Supplies	\$20,000	\$10,000	\$30,000
Communications	\$0	\$500	\$500
Travel	\$0	\$1,000	\$1,000
Equipment	\$0	\$5,000	\$5,000
Miscellaneous	\$0	\$8,367	\$8,367
Total	\$300,000	\$84,100	\$384,100

The applicant provided a breakdown of Task 1 and 2 project expenses and an additional spreadsheet that detailed proposed construction materials and labor costs. No budget or funding irregularities were noted, and the overall project costs appeared to be reasonable. The matching funds comprise 22% of the total project cost and will be contributed by Butte-Silver Bow county government and are secure. No alternative funding plan was detailed in the application.

The project is scheduled to begin in July 2011 with development of a work plan and bid documents, consultation with a structural engineer and reclamation specialist, and beginning stages of construction, as weather permits. Completion of the construction phase of the project will take place from March 2012 to November 2012 with a final report on the project in December 2012.

Environmental Evaluation

The applicant reviewed the environmental impacts associated with this project and with the exception of a moderate temporary adverse demand on government services, no apparent adverse impacts will result from the proposed activities. The beneficial results from this project are primarily related to human health and safety, preservation of historical sites, economic development, restoration of infrastructure, and reclamation of soil and vegetation within the mine yards. Because natural resources associated with the mine yards cannot be repaired and reclaimed without detriment to the historic nature of the sites, mitigation of the impacts through structural restoration and site reclamation is justified.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 19

Applicant Name	Fergus County Road and Bridge Department		
Project Name	Pentachlorophenol Waste Cleanup		
Amount Requested	\$	300,000	
Other Funding Source	\$	<u>706,587</u>	Applicant
Total Project Cost		\$1,006,587	
Amount Recommended	\$	300,000	

Project Summary

The Fergus County road and Bridge Department had a broken valve on a PCP tank which caused PCP to contaminate soil on county storage property. DEQ issued a citation and an AOC was signed by Fergus County and DEQ in February 2009. All hazardous waste must be removed and disposed of by December 31, 2011. Cleanup has begun and the project is in its final and most costly phase. This grant will offset costs for the cleanup.

Public Benefits Assessment

This project will remove PCP-contaminated soil from the county shop area, eliminating the possibility of PCP migration to groundwater and surface water adjacent to the site. Cleanup of this site would conserve natural resources by making the land suitable for use or development and eliminating possible contamination of ground and surface waters. The project will ensure no migration of the PCP or

constituents into aquifers or surface waters, preventing detrimental effects for up to 1,000 people. Fergus County will benefit from the grant funds by lowering its portion of the project cost. The project restores property that has already been damaged, owned and operated by Fergus County. That property is surrounded by a MSU Northern extension office, an Army recruiting Armory, and a C.M. Russell Wildlife Refuge office. The project will likely not create any additional jobs. The benefits from this project are clearly defined and long term. The contamination will be removed, the site will be suitable for county operational use, and the threat to public health will be eliminated. The economic benefit will be minimal. The county will most likely build a storage facility at the site. The project has been underway for four years and is approaching completion. The final phases of transport will be the most costly. If the cleanup stalls or is not completed, DEQ may levy additional fines.

Technical Assessment

Soil in the county shop area is contaminated with a mixture of PCP and diesel. The tank was used from 1991 to 1999 to dip wood planks with PCP as preservative. The tank was not used after 1999. The leaking valve and contamination were discovered in 2006. Incineration is the only known method to dispose of the dioxin constituent properly. Therefore, no project alternatives are available.

In fall 2010, Fergus County will transport contaminated soil that requires incineration off site to a permitted incinerator. The remainder of the less contaminated soil will be stockpiled on site and transported to an approved landfill in summer 2011. This project has a thorough technical background that supports the basis and strategy for removal and has several involved parties including Fergus County, the DEQ, and an environmental/technical consultant. The project goals are clearly defined with milestone dates described in a reasonable timeline that has been accepted by DEQ in the AOC. This grant will expedite the timeframe for completion and relieve some of the Fergus County taxpayer burden for the cleanup.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Contracted Services	\$300,000	\$706,587	\$1,006,587
Total	\$300,000	\$706,587	\$1,006,587

Based on the amount of soil that needs to be transported and disposed from the site, this budget estimate is adequate for the allotted task. Concerns about project funding are primarily tax based. Fergus County is allocating funds each year to pay for the cleanup. These funds can fluctuate depending on current county projects or budget shortfalls. The additional \$300,000 from the RDGP grant will help offset contract services fees and reduce some of the local tax money being used. Based on the situation and the treatment required to dispose of contaminated soil, there is no alternative. The only way to properly dispose of dioxin above landban concentration is by incineration.

Not included in the budget table above are costs incurred by Fergus County for this project before May 2010. Those costs included equipment, supplies, fees, and training and totaled over \$263,000. From May 2010 onward, additional costs for transportation, disposal, and consultant fees will accrue. The applicant will contribute an estimated total of \$706,587 towards these additional costs, under the assumption that a \$300,000 RDGP grant will be awarded. Conversely, if the \$300,000 RDGP grant is not awarded, the county will need to raise additional funds.

Environmental Evaluation

During the excavation phases of this project short-term environmental impacts could occur. Impacts include higher sedimentation loads to Casino Creek, potential contaminants leaching out of the system, and the potential to harm or kill native species currently living in the creek. The work plan assesses potential impacts on the physical environment. During the excavation phase, berms will be installed to reduce sediment loads and limit the overall construction footprint. BMP will be developed and followed for each specific working location. Fergus County's engineering consultants developed a work plan that

thoroughly addresses the potential impacts during excavation and stockpiling. The predicted project duration is approximately one year. Long-term impacts will be mitigated by the proper removal and disposal of the contaminated soil.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 20

Applicant Name	Meagher County Conservation District
Project Name	Thomas Creek Placer Surface Flow Enhancement and Stream Stabilization

Amount Requested	\$ 162,797
Other Funding Sources	\$ 6,555 Applicant
	\$ 5,860 Landowner
	<u>\$ 66,960</u> USFS
Total Project Cost	\$ 242,172

Amount Recommended	\$ 162,797
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Project Summary

The Thomas Creek Placer Surface Flow Enhancement and Stream Stabilization Project near White Sulfur Springs will reclaim the downstream 6,000 feet of the 9,000 total feet of mining- disturbed land. Dredge spoil will be moved and recontoured, and slurry walls will be installed to force groundwater back to the surface.

Public Benefits Assessment

The project will prepare and implement the design for reclamation of Thomas Creek to restore surface water flow. The dredge spoil will be removed or graded to blend with site topography and side channels will be stabilized. Public benefits include: (1) increasing water quantity by using slurry walls to force groundwater to the surface; (2) improving the functionality of the floodplain which may allow for natural stream channel development; (3) allowing for fish passage through increasing the quantity of surface water; and, (4) improving fish and wildlife habitat.

The project will create short-term employment for construction workers and engineers. The final benefits of reclamation will be certain and long term. Without funding, the efforts to reclaim Thomas Creek will stop.

Technical Assessment

The project is a cooperative effort of Meagher County CD, the landowner, and USFS. Thomas Creek was placer mined from the 1860s to the 1940s. Site features such as alluvial fans and dredge spoils piles disrupt Thomas Creek and contribute to the loss of stream flow. Trenching of the site during summer 2010 found that a wood drain was installed along the bottom of the dredge spoil and at the top of bedrock. Water was flowing in the bedrock drain at approximately one cubic foot per second. Since the bedrock drain was discovered in summer 2010, after the grant application had been submitted, the

plugging and removal of the bedrock drain box were not included in the conceptual design and application. However, the flow discovered in the bedrock drain will likely contribute to increased success of reclamation.

The preferred alternative is to restore 6,000 feet of Thomas Creek by removing spoil piles within the floodplain, installing three slurry walls to intersect the groundwater, stabilizing two eroding side gulches, and re-vegetating the disturbed land. The preferred alternative is a cost-effective approach that minimizes the movement of dredge spoil. Reconstruction of the Thomas Creek stream channel is not included in the application. The design plan is that slurry walls will force groundwater to the surface, restoring flow within Thomas Creek. However, without a reconstructed stream channel, the water may re-infiltrate, leaving Thomas Creek dry. Another possibility is that the restored stream flow will attract wildlife and livestock that will disrupt the stream channel and promote re-infiltration of the water. The reclaimed areas should be protected from livestock.

The project is scheduled to begin with design work in winter 2011 and conclude with construction in summer 2012. Permit applications will be prepared following completion of the design documents. The project may cause increased stream flows in Thomas Creek.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$3,900	\$13,650	\$17,550
Contracted Services	\$157,097	\$60,000	\$217,097
Equipment	\$0	\$960	\$960
Supplies	\$1,800	\$3,900	\$5,700
Miscellaneous	\$9,070	\$9,000	\$18,070
Travel	\$0	\$865	\$865
Total	\$162,797	\$79,375	\$242,172

Preparation of the final design for the Thomas Creek reclamation project is part of this grant application. Without the final design, accurate construction costs cannot be reviewed. The application presented a comprehensive list of reclamation tasks and assumptions for the number and unit cost. The numbers of each task are appropriate for the size of the project and the unit costs appear to be reasonable.

The matching funding, approximately 33% of the project cost, will be provided by the USFS, Meagher County CD, and the landowner. The funding from the USFS and Meagher County CD depend on budgeting priorities of the agency and the county. The landowner funds are mostly in-kind services or supplies. If available matching funds are not available, the scope of the project may be reduced by reducing the length of stream to be reclaimed.

Environmental Evaluation

The benefits of this project include reduction of sedimentation, development of a natural stream channel, and, potentially, the reestablishment of a perennial stream. The project does not include reconstruction of the stream channel. The potential exists that the water forced to the surface will re-infiltrate through porous dredge spoil. Re-infiltration would result in three short stretches of stream. The overall effects on the Thomas Creek drainage are limited until the upper reach of the creek is reclaimed. Reclaiming the entire creek will likely require about a decade to complete and a large amount of additional funding.

The Thomas Creek project area is almost entirely on private land. There is no public access to the project area. Overgrazing may prevent or reduce the establishment of vegetation on the disturbed areas. Also, livestock may trample the stream channel and prevent the establishment of riparian areas adjacent to the stream. Disturbance of the stream channel by livestock may result in the decrease or elimination of surface water flow. The potential for negative impacts from livestock increase if continuous surface flow is not established. No methods for reducing the potential effects of livestock are included in the

application. In addition, there are no guarantees protecting the drainage from future mining related disturbances.

The short-term environmental impacts are mostly negative and include machinery noise, dust, and increased sedimentation in Thomas Creek. Most of the adverse effects are unavoidable. The amount of dust generated during construction could be reduced by routine wetting of the surface. Issues with sedimentation in Thomas Creek could be minimized by diverting the creek until the construction work is completed.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cadd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$162,797 upon DNRC approval of the project scope of work, administration, budget, and funding package. The scope of work should be modified to incorporate flow information gathered in summer 2010 into the reclamation design.

Project No. 21

Applicant Name	Montana Department of Environmental Quality		
Project Name	Beal Mountain Mine: Beal Pit Run on Controls, Pond Removals		
Amount Requested	\$ 300,000		
Other Funding Sources	\$ 50,000	Applicant	
	\$ 774,600	USFS	
Total Project Cost	\$1,124,600		
Amount Recommended	\$ 300,000		

Project Summary

DEQ and the USFS are closing and reclaiming the Beal Mountain Mine in Silver Bow County. The proposed project would construct surface water run on control ditches above the Main Beal Pit to prevent infiltration into and saturation of clay zones that contribute to pit wall instability. The instability threatens the integrity of the leach pad, which could lead to a catastrophic release of contaminated water into the German Gulch watershed. In addition, the project would remove ponds and facilities identified as no longer necessary for the ongoing water treatment operations.

Public Benefits Assessment

DEQ proposes to take incremental actions that will contribute to closure of the Beal Mountain Mine and reduce the risk of failure of the pit high wall. The project will conserve natural resources by reducing the amount of water that infiltrates clay sills and promotes pit wall instability. DEQ will protect the leach pad containment dike and the liner under the leach pad from damage due to failure of the pit high wall. The project reduces the chances of catastrophic failure of the dike and the subsequent release of toxic water and material behind it.

Removal of the detoxification pond from the leach pad will reduce the volume of water requiring treatment by eliminating a pathway for clean precipitation and surface runoff to add to contaminated water. By removing ponds and facilities at the site, DEQ will make incremental progress toward site closure. Benefits from project completion are both certain and long term, but because the project is so limited in scale compared to site needs, it would have limited success in achieving site objectives.

This project will create short-term, but well-paid construction jobs in an economically disadvantaged sector of the southwestern Montana economy. It would also reduce the cost to tax payers for cleanup of this site by reducing the amount of water that needs to be treated and helping to prevent failure of the leach pad containment dike. Failure of the dike would cause major environmental damage to the natural resources of the area and greatly increase cleanup costs at the site. The project is both urgent and needed.

Technical Assessment

Beal Mountain Mining, Inc, a subsidiary of Pegasus Gold, mined two small low-grade gold and silver deposits in open pits from 1988 through 1997. In 1998, the company filed for bankruptcy and the reclamation bond funds were subsequently exhausted by the bankruptcy trustee. As a result, the USFS and DEQ are implementing final closure actions at the site. Selenium and other mining related contaminants impact surface water quality in German Gulch Creek. Environmental issues that must be addressed include the long-term geochemical reactivity of the mine waste, geotechnical stability of the pit high wall and leach pad dike, infiltration of precipitation and groundwater into the leach pad, removal of mine plant facilities, and the treatment and disposal of excess solution accumulating on the heap leach pad. The applicant requests funds to incrementally address site remediation and mine closure.

In March 2010, the USFS released a Final EEE/CA for the site and selected preferred alternatives for response actions at two unreclaimed open pits, a waste rock dump, a heap leach pad and associated containment dike, and various land application/disposal areas, roads and mine facility areas. The alternatives in this grant proposal were selected to meet the following USFS objectives:

- Minimize the rate of water accumulation on the heap leach pad and the need for on-going water treatment.
- Minimize the risk of failure of the heap leach pad containment dike resulting from geotechnical stability of the underlying clay-sill pit wall slides.
- Minimize operation and maintenance requirements.
- Advance the goal of achieving surface water quality aquatic standards in German Gulch, Minnesota, and Beefstraight Creeks.
- Maintain erosional stability in reclaimed areas.
- Achieve reclamation objectives for revegetation cover, productivity and diversity.
- Return mine site to multiple uses including recreation and grazing.

Costs for implementing all the preferred alternatives selected in the USFS EEE/CA total \$39,530,139. The costs are currently unfunded liabilities. DEQ has evaluated the preferred alternatives for a subset of activities that partly meet the site objectives and for which funds may be available under the RDGP.

Following is a list of DEQ preferred alternatives and a brief discussion of each:

1. **Construct Beal Pit Run On Control Structures** - Run-on controls would divert surface water away from the Beal Main Pit high wall which is susceptible to slides and geotechnical instability.
2. **Remove Detoxification Pond** - The damaged liner beneath the Detoxification Pond allows direct infiltration of precipitation into the leach pad containment basin.
3. **Remove Storm Water Control Ponds** - Removal of fences and liners from two storm water retention ponds along German Gulch that are no longer needed would be an incremental step towards site reclamation. The pond locations will be graded and re-vegetated to blend with streamside.
4. **Convert Minnesota Pond for Wildlife and Livestock Use** – Removing a fence and reducing the side gradient of Minnesota Pond would allow its use by wildlife and livestock.

The preferred alternatives would affect surface and ground water quality, vegetation, and wildlife habitat.

The project will be coordinated between DEQ and the USFS. Technical aspects of the project appear to be sound with attainable results and certain and long-term benefit. Secondary review expressed a technical concern about the need for storm water diversion ditches and run-on controls structures to the south, as most recharge to the leach pad is thought to originate from the north. DEQ was contacted and responded that storm water on both sides needs to be re-routed away from the leach pad.

Alternatives are cost effective, although costs may be underestimated, and the selected alternatives are only incremental in achieving site objectives. Additional supporting data and the USFS EEE/CA document were included in the application. The staffing and administration of the project were clearly stated, outlining each person, respective titles, and responsibilities.

The project bidding document will be produced in spring 2011, the construction bid will be awarded in summer 2011, construction will begin in August 2011, and the project will be completed by October 2011. The schedule is ample to complete the project, providing that inclement weather does not affect the length of the construction season in this high mountain setting.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Contracted Services	\$300,000	\$824,600	\$1,124,600
Total	\$300,000	\$824,600	\$1,124,600

Costs are lumped in the technical narrative and listed as lump sums, with no breakdown in the project budget. The costs listed for each of the preferred alternatives total \$281,000 (Run-on Control \$60,000; Detoxification pond removal \$165,200; Storm Water Pond Removal \$24,000; Minnesota Pond \$31,800) although the applicant has requested \$300,000. All costs associated with the grant request are listed as contracted services, with no breakdown of individual costs. Justification for the project costs, including the unaccounted for \$19,000, should be provided before contracting. With the lack of financial detail, it is not possible to determine whether the costs are reasonable. Given the financial constraints on both State and federal budgets, the matching funds may not be secure. The application did not include a backup plan if RDGP funding is not provided.

The budget indicates that \$50,000 of DEQ funds and \$774,600 of USFS matching funds will be used for contracted services. USFS has committed \$593,000 in water treatment obligation, \$81,000 for monitoring, and \$100,000 for the waste rock cover soil project in 2010 to 2011.

Environmental Evaluation

The applicant reviewed environmental impacts associated with this project and, with the exception of a minor temporary adverse demand on government services and a minor temporary increase in traffic flow, no apparent adverse impacts will result from the proposed activities. The beneficial results from this project are primarily related to geologic stability, human health and safety, and economic development.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package. Funding should be contingent upon corrected (justify extra \$19,000 in costs) and more detailed costs information provided by DEQ.

Project No. 22

Applicant Name	Crow Tribe of Indians
Project Name	Little Bighorn River Restoration
Amount Requested	\$ 300,000
Other Funding Source	\$ 148,300 Applicant
	<u>\$3,487,700</u> Uncommitted and pending
Total Project Cost	\$3,936,000
Amount Recommended	\$ 300,000

Project Summary

This project addresses a crucial state need to restore and rehabilitate the Little Bighorn River to a more natural and flood-resistant state as it flows through Crow Agency. The project conserves natural resources on a four mile reach of the Little Big Horn River by stabilizing eroding river banks, reducing sediment inputs, improving fish habitat, and revegetating streambank and floodplain areas. It also improves water quality by removing point sources from the floodplain, decreasing sediment inputs and improving the urban stormwater system.

Public Benefits Assessment

Crow Agency is currently susceptible to significant flood damage. This project benefits public health, safety, and welfare and prevents property damage by reducing flood risk in an area with a history of repeated flooding and property damage. This project would reduce the risk of flooding as well as reduce the magnitude of flood damage. These benefits are well defined and long term.

Montanans would directly benefit from this project because a significant flood risk and public health hazard would be reduced. The cost of flood damage would also be significantly reduced. The public will benefit from a restored state waterbody, improved fish and wildlife habitat, improved water quality, increased fishing opportunity, and a scenic amenity for Crow Agency. The main economic benefit is the reduction of flood risk and flood damage. There will be no significant impact on jobs. The project is needed to protect the Crow Agency from future flooding. Broad support for the project has been received from Senators Baucus and Tester, BIA representatives, Montana Disaster and Emergency Services Division, and numerous county and tribal entities.

Technical Assessment

The application described the flooding problems that Crow Agency has experienced during the past 30 years. No past efforts to address the flooding issues are presented in the application. Problems this project would address include degraded stream, riparian and wetland habitat; water quality impairment; and, life and property risks along a four-mile reach of the river within and immediately surrounding Crow Agency. Documentation of previous flood damage and historic aerial photographs that document channel impairments were included with the application. The project history narrative is thorough and complete. Several project alternatives were considered including a no action alternative; reconfiguration of the channel and floodplain through construction of a high-flow swale, flood control barrier, flood detention structures, and bank stabilization; and, relocation of residential structures to areas outside of the floodplain. The preferred alternative includes stabilizing streambanks, increasing floodplain conveyance, re-vegetating the riparian area, and constructing a flood control levee. This alternative was chosen because it has the best chance of project success, is socially acceptable to local residents, and provides the greatest benefit for the project cost. Other alternatives either did not solve the problem or were not cost effective.

Technical concerns include the feasibility of reducing flood elevations by construction of a floodplain conveyance channel and potential negative effects of constructing a flood control levee. The application did not provide adequate evidence that the floodplain conveyance channel will achieve its desired result and reduce overall flood impacts.

The project has been coordinated with several governmental agencies. The application listed the FEMA as a major potential funding source. It is assumed that the applicant has coordinated with them as well as the USFWS and the BIA. The application mentions USFWS and BIA and both agencies provided letters of support. No permits have been received for this project but a timeline for permit acquisition was included with the application. The project is planned to begin in March 2011 and be completed in December 2012. This schedule is reasonable for construction. However, if awarded, RDGP funds cannot be used before July 1, 2011. The documentation provided is adequate for the level of conceptual design in the application.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$0	\$46,800	\$46,800
Contracted Services	\$300,000	\$3,532,700	\$3,832,700
Equipment	\$0	\$50,000	\$50,000
Communications	\$0	\$6,500	\$6,500
Total	\$300,000	\$3,636,000	\$3,936,000

This large project depends on many different funding sources. Most of the cost is for contracted services. Given the size and scope of the project, the cost is reasonable. If the benefits of the floodplain conveyance channel cannot be demonstrated, then the \$1.2 million cost of this design element should be re-examined. The budget is complete, well defined, and broken down into clear components and tasks. The applicant has committed to provide \$148,300 of the matching funds. According to the funding scheme, \$3.5 million of the project budget will be grants from non-state sources. A major concern is that none of the matching grant funds are secured. The application did not include a backup funding plan.

Environmental Evaluation

The positive environmental impacts of this project are long term and numerous. Benefits include the improvement of fish and wildlife habitat, improved channel stability, improved water quality, enhancement of floodplain vegetation, improvements in fish passage, and reduced erosion and sedimentation. However, there may be long-term adverse environmental impact from the construction of a new flood control levee. A levee can limit the natural interaction between a river and its floodplain which can lead to negative effects to natural fluvial processes and unintended hydraulic impacts including increased flood velocities, floodplain erosion, channel vertical instability due to aggradation or degradation, and channel lateral instability. Removing floodwaters from the floodplain also eliminates the deposition of fine sediment on the floodplain. Fine sediments are critical for some floodplain vegetation species. Removing floodwaters could reduce floodplain productivity, biodiversity, and habitat complexity. The significance of these impacts cannot be determined from the information provided. But, the significance of the impacts would be limited because the floodplain area protected by the levee is relatively small. The beneficial environmental impacts of the channel restoration and revegetation are greater than the potential adverse impacts of the flood control levee. There will be short-term environmental impacts to air and water quality. These short-term impacts are typically addressed by the regulatory agencies that will be involved with permitting this project. These permitting agencies will require the applicant to follow specific construction practices and BMP to reduce short-term impacts.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package. The requested grant and a subsequent contract with DNRC should be contingent upon the successful completion of the funding package.

Project No. 23

Applicant Name	Richland County Conservation District
Project Name	Lower Yellowstone River Bank Stabilization
Amount Requested	\$ 293,078
Other Funding Source	\$ 13,950 Applicant
Total Project Cost	\$ 307,028
Amount Recommended	\$ 293,078

Project Summary

This project is the initial effort of a coalition of conservation districts, state agencies, irrigation districts, and landowners along a 50-mile reach of the lower Yellowstone River to demonstrate appropriate bank stabilization and channel migration easement options to landowners. The demonstration project will guide agencies and landowners in future implementation techniques and costs of bank stabilization projects on the lower Yellowstone River.

Public Benefits Assessment

The public benefit of this project is limited. As a standalone bank stabilization project, in which an over steepened bank armored with concrete rubble will be replaced with an engineered stabilization alternative, it will benefit the landowner of the selected project site and to a small degree localized natural resources. The project will protect valuable agricultural land which will allow for continued production and reduce or eliminate the need for continued bank maintenance. Benefits to water resources include the removal of 1,550 cy of concrete containing rebar, paint, grease, and oils that have potential to pollute the lower Yellowstone River. On a localized level the project will create a riparian buffer strip with native vegetation that will be capable of capturing fertilizers, pesticides, and other agricultural products and provide riparian habitat. Removal of undesirable habitat alterations associated with the existing bank will provide localized aquatic habitat improvements along 700 linear feet of bank.

These changes in stabilization practices taken cumulatively along the entire reach of the lower Yellowstone could provide great public benefit to aquatic and riparian habitat, water quality, recreational use and safety, and many of the natural resources associated with the lower Yellowstone River. The application did not go far enough in describing the connection between this standalone stabilization project and how it will develop the demonstration project to effect cumulative impact along the entire reach. Public benefit from this project will not be realized until these practices are implemented on larger reaches of the river.

Technical Assessment

The problem to be solved, the duration, cause, and the impaired resources are well defined. The problem in the lower Yellowstone was evaluated by a coalition of conservation districts (Richland and McKenzie), irrigation districts (Sidney and Lower Yellowstone), FWP, and landowners. A 2009 study documented the

stabilization efforts along the 50-mile reach of the lower Yellowstone River, many of which do not meet accepted standards. Bank stabilization efforts on the lower Yellowstone River in the last 20 years have used broken concrete rubble as rip-rap material due to its cost and availability. These methods have caused a number of problems and undesirable effects along reaches in the lower Yellowstone. The problem with using concrete rubble as a stabilization material is that the material used is physically inadequate (size, shape, and specific gravity), is not properly placed (end dumped over an over-steepened bank), is inadequate in providing bank stabilization (erosion continues up and downstream of the treatment and threatened by undermining and flanking), and is a source of hazards and contaminants to the river (rebar, dislodged slabs, paint, and oil and grease). Critical information in assessing the extent and severity of the cumulative problem was not provided in the application. The specific number and type of existing bank stabilization treatments, their distribution, those recommended for replacement, and the number and type of new Montana Stream Protection Act permits affecting the lower Yellowstone River were not provided.

Six alternatives were considered for this demonstration project, including no action. Three of the alternatives are similar. The selected alternative is clearly the best remedy for this site and appears it would achieve the desired effect. The selected alternative will remove 1,550 cy of concrete rubble rip-rap along 700 linear feet of bank and re-stabilize the bank using an engineered solution. The over-steepened bank will be pulled back to a sustainable slope that will allow for the planting and growth of native vegetation. The selected alternative uses DEQ guidelines in selecting concrete and sandstone rip-rap to be placed at the toe (below the base flow surface water elevation) extending to the scour depth, places fieldstone composite on the upper bank (above the base flow surface water elevation), and provides a native vegetated riparian bench to stabilize the bank. The bank stabilization demonstration project is well developed and has addressed most if not all technical issues of completing a stabilization project.

However, the application did not develop post construction project monitoring, public outreach and education, and strategies for larger scale implementation. Monitoring should be conducted on a long term basis (at least 20 years) and attempt (1) to quantify native vegetation establishment, (2) to evaluate effectiveness of the riparian buffer strip and stabilization techniques, (3) to assess cost effectiveness, and (4) other parameters. Along with monitoring, the project needs to develop how information from the demonstration project will be disseminated to the public through outreach and education. In order to meet the stated goals, the project must develop a strategy for larger scale implementation, including funding strategies. The applicant should conduct detailed long term monitoring of the project site, focused outreach and education, and explore methods to provide funding or incentives to landowners for channel migration easements and similar bank stabilization projects.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$13,950	\$13,950	\$27,900
Contracted Services	\$279,128	\$0	\$279,128
Total	\$293,078	\$13,950	\$307,028

The project is economically feasible and the budget is clear and complete for this demonstration. The application did not address how the demonstration project will change stabilization practices on the scale of the targeted 50-mile reach of river, where the stated benefits will be realized, and how stated goals will be achieved. Additional funding could be included in the application to identify tools, strategy, and specific tasks to monitor, educate, and implement the practices on the reach scale.

The status of project funding depends upon receiving the RDGP grant. In-kind match from the Richland County CD is provided in sharing the cost to administer the grant. A 20-year present worth analysis would be useful in assessing the financial feasibility of this project, comparing the no action alternative with the selected alternative.

Environmental Evaluation

The proposed bank stabilization demonstration project will be environmentally beneficial. There are no environmental concerns in completing this project. During the construction period some disturbance to soils will occur, creating temporary turbidity in the river. This impact can be mitigated by employing standard construction BMP to prevent erosion.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$293,078 upon DNRC approval of the project scope of work, administration, budget, and funding package. The scope of work should be modified to include viable post construction project monitoring, public outreach and education, and strategies for larger scale implementation.

Project No. 24

Applicant Name	Montana Department of Environmental Quality
Project Name	Landusky Mine – Construction of Clarifier and Sludge Recycling System for Treatment of Residual Wastewater in Leaching Circuit

Amount Requested	\$ 300,000
Other Funding Source	\$ 388,502 Applicant
Total Project Cost	\$ 688,502

Amount Recommended	\$ 300,000
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Project Summary

This project would replace an undersized existing water treatment plant located at the Landusky Mine with a large clarifier and sludge recycling system. The new clarifier is needed because significant changes in water quality and quantity are being produced from the mine leaching areas. Without the new treatment system, operations and maintenance costs will increase and adverse effects to surrounding water bodies could result.

Public Benefits Assessment

Benefits to Montana citizens could be significant, depending on project success. Direct benefits include improvement of human health and the environment resulting from the treatment of contaminated water at a historical mining operation. Indirect benefits include increased recreational opportunities, such as fishing, and improved wildlife habitat. This project will moderately conserve natural resources by reclaiming mine-waste contaminated water and returning it to streams for traditional in-stream uses. Also, removing contaminants from area water sources would protect public health. This project will not create long-term jobs for Montanans. Assuming the treatment facility is sized properly, the benefits should be certain and long term. Based on the recent increases in contamination at the site, this project is needed and urgent.

Technical Assessment

Increased levels of acidity and dissolved metals at the Landusky Mine have required additional pre-treatment, prior to processing at the existing bio-treatment facility. A new treatment facility that can handle the increasing contaminant load is necessary to meet water quality standards. The current RCTS

used for pre-treatment to the bio-treatment facility has become ineffective due to gypsum being produced in the treated water. The problems associated using hydrated lime, gypsum production specifically, should have been anticipated since this is a common problem associated with the technology. The project need is defined, but exact numbers of individuals affected were not included in the application.

The project has the following goals: (1) to treat water that collects within the 1987 and 1991 leach pads to remove metals and acidity; (2) to remove suspended sediment from the treated water to allow continued use of the bio-treatment facility; and, (3) to treat the water at a rate of at least 300 gallons per minute. The main objective of this project is constructing a 300,000 gallon clarifier. Appropriate supporting documents were included with the application.

The applicant considered 10 project alternatives in addition the proposal. The alternatives include: (1) no action; (2) abandon bio-treatment and take leach pad water to LWTP or ZWTP; (3) abandon bio-treatment and take pad water to a land acquisition discharge; (4) abandon bio-treatment and allow pad water to mix with groundwater; (5) pre-treat pad water at the LWTP then pump back to bio-treatment plant; (6) Cap the leach pads with a HDPE or GeoMax liner system; (7) replace the sparkling filters with reverse osmosis or other filters with sufficient capacity; (8) treat pad pH by injecting slaked lime or sodium hydroxide directly into the leach pad pool; (9) biologically treat selenium, nitrate, and cyanide in-situ; and, (10) increase pre-treatment settling pond capacity.

The alternatives analysis provided adequate information and comparison data. However, the cost-benefit analysis provided little detail comparing the project cost to the potential benefits. The proposal uses a proven technology that has been used in many similar situations and should meet the desired project goals. The application did not provide enough design and sizing details to assess the likelihood of project success. However, the engineering firm in charge of this project has designed numerous similar systems and should be able to provide adequate designs for this project.

The proposed project will be coordinated between the DEQ and the BLM. Both parties have significant experience in remediating this site. Agency staff responsible for this project are known and respected for their remediation expertise and will provide adequate project leadership. The project schedule lacks detail but does provide measurable and achievable milestones. Design, site preparation, and bid preparation will be complete by early 2011. The target date for completion is August 2012.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salary and Wages	\$0	\$3,027	\$3,027
Fringe Benefits	\$0	\$908	\$908
Contract Services	\$ 300,000	\$383,000	\$683,000
Travel	\$0	\$662	\$662
Miscellaneous	\$0	\$905	\$905
Total	\$300,000	\$388,502	\$688,502

The application stated that grant funds would be used for contracted services. Except to indicate that \$100,000 will be used for labor and \$200,000 will be used for materials, the application did not provide further detail. The applicant did not provide a detailed breakdown of costs in the budget justification, however, no apparent budget or funding irregularities were found and the budget seems reasonable for fund the project. A detailed cost comparison of the alternatives was not provided. Matching funds from both DEQ and BLM appear to be secure. A backup plan was not discussed if the grant funding is not provided.

Environmental Evaluation

The applicant reviewed environmental impacts associated with this project. The applicant did not address one apparent adverse long-term impact that might result. The use of hydrated lime in water treatment processes, such as those described at this site, produces a large volume of sludge containing high

concentrations of metal hydroxides. If the sludge is not adequately dealt with, the metals can re-enter the system, causing additional contamination. The beneficial results are primarily related to the removal of contaminated, mining-impacted soils that are affecting groundwater and surface water in the area. Minimal short-term construction-related impacts will be controlled through permitting, landowner access permission, and proper construction methodology.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Project No. 25

Applicant Name	Montana Fish, Wildlife and Parks		
Project Name	Impacts of Energy Development and Leasing Stipulations on Mule Deer Habitat Selection, Distribution, and Population Dynamics		
Amount Requested	\$	300,000	
Other Funding Sources	\$	181,000	Applicant
	\$	531,500	BLM
	\$	<u>372,500</u>	PR NCN
Grant Total Project Cost	\$	1,385,000	
Amount Recommended	\$	300,000	

Project Summary

This proposal is for a research project designed to answer the questions: (1) How does CBM natural gas development and the associated infrastructure affect mule deer habitat use, distribution, and population dynamics and, (2) How do commonly applied leasing stipulations designed to mitigate or change the impact of CBM natural gas development and the associated infrastructure affect mule deer habitat use, distribution, and population dynamics?

Public Benefits Assessment

The project would provide long-term benefits to two elements that are important to many Montanans: energy development and mule deer. The mining and energy industry accounts for a significant portion of the personal income generated in Montana. Mule deer and mule deer hunting are part of the culture in Montana and deer hunting generates about half of Montana's hunting license revenue. There is a need to understand if and how energy development impacts mule deer; to determine how best to mitigate those impacts; and, to devise strategies for developing energy resources that are compatible with mule deer conservation.

Many Montanans would indirectly benefit from this project. Mule deer hunting and energy development are important in Montana, and the same energy leasing stipulations that would be evaluated in this project may be applied in many parts of the state. Recently, the depressed economy has slowed energy development. However, development is expected to expand as the economy recovers. The commissioned literature review found that there are few studies investigating the population-level impacts of energy development on wildlife or the effectiveness of management actions designed to minimize those impacts. Energy development and the associated infrastructure appear to affect the distribution of

big game animals, but current research is inadequate due to poor study design and a lack of control study areas.

Technical Assessment

The PRB has a substantial potential for CBM energy development. The basin is also highly valued for mule deer. The proposed study will help determine how CBM natural gas development affect mule deer and how commonly applied leasing stipulations designed to mitigate or change the impact of CBM natural gas development affect mule deer. Phase 1 (pre-development phase) of this study will establish baseline information on mule deer in areas without CBM development; in areas with prior development but without stipulations to guide the course of development; and, in areas with prior development and with stipulations to energy development leases that are designed to protect mule deer and with stipulations designed to protect sage grouse. To fully accomplish the goals of this project, phase 2 (post-development phase) of study would need to be implemented. Phase 2 would closely replicate the phase 1 study after new energy development is implemented.

The information gathered under this study will be useful for future management decisions, as impacts of energy development on mule deer are largely unknown. FWP and federal wildlife and land management agencies have made the issue a top priority research need. Results from this project could establish mitigations for energy development that minimize impacts to mule deer in Montana.

The proposal adequately reviewed the scientific, peer reviewed literature regarding impacts of energy development on big game species, and the stipulations and mitigation measures used by management agencies to mitigate the impacts of energy development on mule deer winter range.

Project participants are FWP, the Wyoming Game and Fish Department, and the BLM. Additional funding would be provided by the PR NCN Program that is administered jointly by the Association of Fish and Wildlife Agencies and the USFWS.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$0	\$296,055	\$ 296,055
Fringe Benefits	\$0	\$93,144	\$93,144
Contracted Services	\$128,000	\$170,400	\$298,400
Equipment	\$157,080	\$290,206	\$447,286
Supplies and Materials	\$4,000	\$2,000	\$6,000
Communications	\$920	\$464	\$1,384
Travel	\$10,000	\$50,000	\$60,000
Rent and Utilities	\$0	\$6,374	\$6,374
Indirect Costs/Overhead	\$ 0	\$176,501	\$176,501
Total	\$300,000	\$1,085,145	\$1,385,145

The applicant provided a thorough and well planned budget in the grant proposal. The presented costs seem reasonable. All funding and in-kind support from FWP detailed below have been secured. FWP cash contributions toward this project are approximately \$181,000 for the three-year period. Approximately \$531,500 are required from BLM base budgets and about half of this funding has been secured. The BLM has submitted base budget requests for the remainder of their funding contributions over the next three federal fiscal years. For the three-year period detailed in the application, the project would rely on grants. The applicants are applying for a \$372,671 grant from the PR NCN program that is administered jointly by the Association of Fish and Wildlife Agencies and the USFWS. The \$300,000 requested from the RDGP represents the remainder of the funds needed to complete this project.

The proposed budget for contracted services is approximately \$298,400. These costs are entirely for aircraft and pilots to conduct fieldwork associated with capturing deer, monitoring marked deer, and

conducting deer surveys in the study areas. Most of the work would take place out of field camps and small communities in southeastern Montana. The travel budget for this project is \$60,000. The applicants anticipate that vehicle travel would total more than 100,000 miles annually. The equipment budget is approximately \$447,000.

The budget proposed seems reasonable for a research project of this size. The funding of the next phase of the project, phase 2 (post-development phase) has not been secured. This is understandable because the next phase of the project is three years out and funding cannot be secured at this point. However, it does leave the future and success of the project uncertain.

Environmental Evaluation

Impacts associated with the proposed activities would only affect a couple of resources and are relatively limited and temporary. Since there are no surface disturbing activities or development associated with the project, the majority of resources would not be subject to any short-term or long-term disturbances.

Wildlife and local employment are the two resources that would be impacted by the proposed activities. Mule deer would be directly impacted by the proposed activities as they would experience temporary disturbance as a result of collaring and monitoring. These disturbances would be temporary and would not significantly affect mule deer. Mule deer populations and habitat would likely be indirectly impacted in a beneficial way as a result of the conclusions of the research. The information obtained from the research would improve resource managers understanding of mule deer and how they respond to disturbances such as energy development. This would improve mule deer management within Montana and the west, and would allow for more effective mitigation measures and habitat protection. Local employment could also be beneficially impacted because the proposed project would create seven jobs annually (two year-round and five temporary). These jobs would be professional or professional-training type positions. Although many of the positions would be filled by non-locals, there is the potential that some of them may be filled by locals. In addition, the project may provide other local employment opportunities such as aircraft rental and for pilots or maintenance positions.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package. RDGP funds should be used only for work conducted in Montana.

Project No. 26

Applicant Name	Anaconda-Deer Lodge County		
Project Name	Anaconda Superfund Remediation Trails Program		
Amount Requested	\$ 300,000		
Other Funding Sources	\$ 60,000	Montana Department of Transportation	
	\$ 5,000	Applicant	
Total Project Cost	\$ 365,000		
Amount Recommended	\$ 300,000		

Project Summary

The Anaconda-Deer Lodge County project includes the construction of approximately 2.5 miles of multimodal, primary trail in a mining-impacted area. The primary trail has been designed to connect to several secondary trails.

Public Benefits Assessment

This project includes the design for constructing approximately 2.5 miles of a primary trail. Two primary trails are identified. Trail V extends from Anaconda to Opportunity and trail W extends west of Anaconda. This project depends on access agreements and right-of-ways permits. Public benefits may include: (1) reduction of potential conflict or accidents between motorized and non-motorized travel; (2) conservation of fossil fuels; (3) provision of healthy alternatives to using motorized transportation; and, (4) contribution to creating an attractive community through mitigation of adverse effects on recreation from mining and smelting activities. While this project mitigates lost recreational opportunity due to mining impacts in the Anaconda area, it does not repair or reclaim environmental damage to natural resources, nor conserve natural resources. There is no urgent need to complete this project.

Implementing this project will create short-term employment for construction workers and engineers. The final benefits of trail building will be certain and long term. Without funding, the efforts to build the trail system will be delayed.

Technical Assessment

The applicant did not consider alternative ways that loss of recreational opportunities due to mining impacts in the area could be mitigated. Alternatives that were addressed pertained only to trail construction. The estimated cost to pave trail V with asphalt is \$917,836. The estimated cost for Trail W is \$487,112. Thus, the \$300,000 Reclamation Development Grants Program (RDGP) grant would only fund 33% of trail V or 62% of trail W. Each trail would have limited connectivity to secondary trails. Paving the trails with gravel would cost \$382,928 for trail V and \$248,526 for trail W. However, gravel surfaced trails limit the types of users and would be difficult to construct to American with Disabilities Act (ADA) standards. But, the gravel trails could be paved at a later date as funding becomes available. Anaconda-Deer Lodge County continues to actively seek additional grant funding to supplement the trails construction funding.

The project is scheduled to begin with design work in winter 2011 and conclude with construction in summer 2012.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$0	\$3,375	\$3,375
Fringe Benefits	\$0	\$1,125	\$1,125
Contracted Services	\$300,000	\$ 60,000	\$360,000
Supplies	\$0	\$500	\$500
Total	\$300,000	\$ 65,000	\$365,000

The final design for the trail building project is complete and accurate construction cost estimates were prepared. The application presented a detailed explanation of the budget categories used to develop the budget for this project. The costs appear to be realistic and the bid process described in the application should eliminate the possibility of overspending.

The matching funding will be provided by the DOT Community Transportation Enhancement Program and Anaconda-Deer Lodge County. Matching funds are approximately 18% of project cost. The funding from Anaconda-Deer Lodge County depends on its budgeting priorities. If matching funds are not available, the project may be delayed.

Environmental Evaluation

The long-term effects of the trail building are positive and include less conflict between motorized and non-motorized vehicles. The benefits include increased physical fitness, increased wildlife viewing opportunities, increased safety, and regional connectivity.

The short term environmental impacts are mostly negative and include machinery noise and dust. Most of the adverse effects are unavoidable. The amount of dust generated during construction could be reduced by routine wetting of the surface.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC recommends grant funding of \$300,000 upon DNRC approval of the project scope of work, administration, budget, and funding package.

Part 2. Projects Not Recommended for Funding

Applicant Name	Cascade County Conservation District
Project Name	Whitmore Ravine Erosion Control Project Coordinator
Amount Requested	\$ 253,000
Other Funding Source	\$ 0
Total Project Cost	\$ 253,000
Amount Recommended	\$ 0

Project Summary

Whitmore Ravine is an ephemeral coulee near the north end of MAFB, east of Great Falls, which drains into the Missouri River. Erosion in the ravine has resulted in steep banks, loss of farmland, and increased sediment load to the river. The Cascade County CD would hire a project coordinator to complete permits, coordinate with engineers and contractors, interact with governmental offices, develop and access funding sources, and communicate with the Montana Legislature and Congressional delegation about project status.

Public Benefits Assessment

A project coordinator would help to increase the likelihood of successful fundraising and ultimate completion of the Whitmore Ravine project. Public benefits to public safety, wildlife habitat, water quality and power generation will occur when an erosion and sediment project is implemented. A coordinator will provide more focus to clarify issues, identify tasks to mitigate the erosion in Whitmore Ravine, and develop possible funding sources.

Technical Assessment

Channel incision and erosion are causing the loss of private agricultural land along Whitmore Ravine. An extensive delta has developed in the Missouri River at the mouth of the ravine. Issues at the site include erosion, unstable sediments, storm water discharge quantity, and environmental impacts. The project goal is to mitigate the erosion in Whitmore Ravine and to reduce the sedimentation to the Missouri River. The primary project objective is to fund a project coordinator position within the Cascade County CD. The project coordinator will be the single point of contact for the project with the Montana Legislature, the Montana Congressional delegation, and the public; will develop and access funding sources; will set the project schedule; will coordinate stakeholder meetings; and, will coordinate functions with engineers and contractors.

The application is unclear why past efforts to address the erosion problems at Whitmore Ravine have failed and how a project coordinator will be able to address these factors. The application did not adequately define the technical goals, roles, or responsibilities of the project coordinator. The application did not explain how the project coordinator will achieve the project objectives.

The project would fund the coordinator position for two years, with contingencies to extend the position. This schedule may not be sufficient to complete the project. If the erosion control and mitigation project is funded and implemented in phases, as currently designed, the project duration will clearly extend beyond the two-year funding goal of this application.

The applicant considered only two alternatives: no action and the preferred alternative, to hire a project coordinator. Alternatives which would possibly phase in the project coordinator role before or as construction and mitigation began, or a reduced project coordinator role over a greater time period, may be more cost-effective and should have been explored.

The application did not clearly identify the project stakeholders. However, both MAFB and PPL Montana appear to have technical and financial interest in the Whitmore Ravine project. The application should have analyzed an alternative in which MAFB would coordinate project funding and construction activities. The application identifies MAFB as financially responsible for the erosion at Whitmore Ravine (supporting documentation 2007 Montana Legislature House Joint Resolution No. 20). MAFB should be included in the project planning, implementation, and funding. The application also identified impacts to energy production at a PPL power plant, but PPL Montana also does not appear to be part of this project. PPL Montana has not offered any financial support to help remedy the sedimentation issue, suggesting that it is not a concern for the power company.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Contracted Services	\$253,000	\$0	\$253,000
Total	\$253,000	\$0	\$253,000

The preferred alternative does not appear to be the most cost-effective alternative. The applicant requested \$253,000 to fund the project coordinator position for two years, plus 20 weeks for contingency. The total salary for a contracted project coordinator is budgeted at \$70,000 per year. Other contracted services (legal, engineering, web development, accounting, meeting venues, or other) are budgeted at \$25,000 per year. Travel for the coordinator and Cascade County CD board supervisor are budgeted for \$26,500 per year. Contingency costs are budgeted at \$5,000 per year. Before contracting, the applicant should provide additional justification for all of these costs (for example, the budgeted number of stakeholder meetings, documents to produce, and other details). Travel costs should be explained as well (number of expected trips and other details).

Management and coordination of the actual mitigation work in the field is the direct responsibility of the engineering firm that will complete the construction. The cost estimate for this work was included in the PER and was included with the application.

The applicant has not provided a backup plan if funding is not received. No other individuals or entities have offered financial support for the project. The Cascade County CD also has not committed matching funds to the project. The application did not specify objectives that might be achieved with reduced funding.

Environmental Evaluation

The project is limited to the formation of a project coordinator position. Therefore, no short-term or long-term environmental impacts will occur.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC does not recommend funding for this project. The project sponsor has withdrawn the project.

The DNRC initially recommended grant funding of up to \$253,000 upon DNRC approval of the project scope of work, administration, budget, and funding package. Contingencies to the recommendation identified the need for a budget that is more clearly explained and tied to defined tasks with specific deliverables. If funded, contract language should include specific tasks and deliverables, a revised schedule, and specific budget to ensure that the project is successful. Cascade County should also identify match funds for this project.

Applicant Name	Cascade County Conservation District		
Project Name	Whitmore Ravine Erosion Control and Storm Drainage, Phase 1		
Amount Requested	\$ 300,000		
Other Funding Sources	\$ 572,049	Applicant	
	<u>\$3,016,148</u>	Unknown	
Total Project Cost	\$3,888,197		
Amount Recommended	\$	0	

Project Summary

Whitmore Ravine is an ephemeral coulee near the northern end of MAFB, east of Great Falls, which drains into the Missouri River. Erosion in the ravine has resulted in steep banks, loss of farmland, and increased sediment load to the Missouri River. This project would install pipelines to reduce erosion.

Public Benefits Assessment

Erosion control and storm drainage mitigation would benefit the public and environment by reducing the erosion and the sediment transported to the river, and eliminating the unsafe and unstable vertical ravine walls. The increased sediment load to the reservoir and the Missouri River is well documented. However, recreational users of trails in the area are not likely to encounter the ravine walls because private land would need to be crossed to intersect hazardous areas.

Technical Assessment

Private agricultural land along Whitmore Ravine is being lost to channel incision and erosion. An extensive delta has developed in the Missouri River at the mouth of the ravine. Issues at the site include erosion, unstable sediments, storm water discharge quantity, and related environmental impacts. The primary project objective is to provide an engineered control to mitigate erosion and storm drainage impacts to Whitmore Ravine.

The latest PER screened 10 alternatives including no action and analyzed five of those in detail. The alternatives analysis in the application and supporting PER supported the preferred alternative. However, it was not clear which alternatives were analyzed specifically for phase 1 because alternatives for phase 2 and phase 3 were included as well. The applicant should provide more detailed analysis of alternatives specific only to phase 1 prior to implementation of any work. The recommended phase 1 alternative is to install about 2½ miles of piping in the West Fork (60-inch diameter pipe) and Middle Fork (42-inch diameter pipe) of Whitmore Ravine to carry all runoff; re-contour and fence the West Fork; and, construct a wetland mitigation pond. The proposed piping sizes in the West and Middle forks appear to be larger than what is necessary to convey the expected flows. This pipeline will carry storm water about 7,000 feet before returning flows to a more stable portion of the ravine that is less susceptible to erosion. Completion of phase 1 should result in reduced sediment load transport to the Missouri River. Selected portions of the drainage will be fenced for public safety. Secondary reviewers expressed concern that fencing the ravine is not a long-term nor very effective solution to the problems at Whitmore Ravine. Further, addressing safety concerns does not appear to be the primary focus of the phase 1 project.

Although the erosion control and storm drainage project is feasible, the environmental conditions responsible for the increase in surface drainage are not characterized and do not appear to be understood. The application discussed the impact that surface flows from MAFB have had on Whitmore Ravine, but the relationship was not fully explored. Development associated with MAFB appears to be partly responsible for impacts to the hydrologic system. Year round surface flows are occurring in the Whitmore Ravine. Therefore, sources other than seasonal storm water discharge appear to contribute to the erosion and sedimentation problems. The amount of water from other sources has not been quantified.

The applicant should fully evaluate sources and quantities of water contributed from other sources before engineering control measures. The proposed mitigation may not catch all flows that contribute to erosion in the ravine because the upgradient hydrology is unknown. Therefore, the proposed project may not be a successful long-term solution. The hydrologic conditions in Whitmore Ravine should be characterized to determine the contribution of discharge from shallow groundwater drains installed beneath MAFB and, possibly, artesian flows from the underlying bedrock aquifers. In addition, pre-development conditions on MAFB should be compared with current levels of development to determine how land use changes at MAFB have directly contributed to surface discharge and thus increased erosion potential.

The applicant stated that energy production at a PPL power plant has been impacted. Sediment increases in the Missouri River can impact TMDL limits, but the sediment will be deposited behind the dam and not travel further down river.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Consulting Engineer	\$300,000	\$0	\$300,000
Contracted Services	\$	\$2,698,040	\$2,698,040
Environmental Permits	\$0	\$80,941	\$80,941
Administrative Costs	\$0	\$30,000	\$30,000
Contingency	\$0	\$539,608	\$539,608
Total	\$300,000	\$3,588,197	\$3,888,197

The applicant requested \$300,000 in RDGP funds for contracted services to complete the erosion control and storm drainage project design and to administer construction. The Cascade County CD match of \$572,049 is allocated to contractor costs, but the source of the match is not identified. The remainder of phase 1 costs, \$3,016,148, is unsecured, but may come from the following sources:

DNRC-RRGL Program

WRDA

Direct Federal Appropriations

SRF Loan

EQIP funds

Application made May 2010

Application made November 2009

Application made March 2010

Pending

Application made May 2010

The proposal did not include MAFB in either the funding package or project implementation. Yet, a concurrent application for RDGP funding from the Cascade County CD for a coordinator to raise funds and oversee the reclamation of Whitmore Ravine identified MAFB as financially responsible for the erosion at Whitmore Ravine. Therefore, MAFB should be included in the project planning, implementation, and funding.

Project implementation is contingent upon funding from the RDGP program and the other programs. At present, only Cascade County CD has committed resources to the project, and grants, loans and appropriations are pending. The applicant has not provided a backup plan if full funding is not received. Financial commitment from MAFB, PPL (identified as being impacted by the sedimentation), recreational trails groups, landowners, or FWP have not been offered. Financial support from these entities would provide necessary documentation of project support. The applicant did not provide a backup plan, if reduced funding was obtained. RDGP funding should be contingent upon the applicant receiving sufficient funding to meet project costs and completion of engineering control measures.

Completing the proposed work without fully understanding or addressing the source of the increased surface flows that cause additional erosion and sedimentation may not be cost effective. The issue of MAFB liability should be resolved before additional state grant funds are spent on this project.

Environmental Evaluation

Most of the adverse environmental impacts that would be associated with the phase 1 project are short term and associated with the proposed erosion control and storm drainage construction activities. Heavy equipment and machinery will be needed during pipeline installation. Increases in suspended particulate from construction activities are expected to be minimal. The reduction in erodible lands following the installation of the pipeline will have a positive effect on the surrounding private agricultural lands. Long-term beneficial impacts depend on identification of the contributors to surface water discharge increases.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

No funding is recommended for this project. DNRC recommends re-application after the major funding has been secured and after project management has been better defined. A hydrologic study should also be completed before reapplying.

Applicant Name	Powder River Conservation District		
Project Name	Predevelopment Hydrology Determination for the Proposed Otter Creek Coal Mine within the Regional Framework		
Amount Requested	\$	239,496	
Other Funding Source	\$	10,000	Applicant
Other Funding Sources	\$	37,544	Montana Tech
Total Project Cost	\$	287,040	
Amount Recommended	\$	0	

Project Summary

This project is to collect and evaluate hydrogeologic data to characterize baseline hydrologic and geochemical conditions for major aquifers, springs and streams in the Otter Creek watershed and tie the monitoring into the existing regional monitoring program. The project will be conducted by the MBMG within the PRB regional groundwater flow system. The project will differentiate between development impacts from the Otter Creek coal track and naturally occurring hydrologic and geochemical variation.

Public Benefits Assessment

This study is intended to assess potential environmental impacts from development of the Otter Creek coal track. Information on baseline hydrologic and geochemical conditions in the Otter Creek watershed is needed prior to development of the coal track. Establishing hydrologic and geochemical baseline conditions and monitoring water resources are necessary to measure changes in water resources, potential damage, and conservation needs in the watershed.

The benefits of establishing a hydrologic baseline could be certain and are important in the long term. Montanans directly benefiting from the study could be local landowners and ranchers and stakeholders within the watershed. The study could prevent damage to water rights, irrigated lands, springs, streams, aquatics, riparian vegetation, and recreational uses by assessing changes in the baseline conditions due to coal development. The greatest benefit of the project could be establishment of a long-term regional monitoring network. However, the project as currently planned may not achieve this goal if it is not coordinated with decision makers from regulating agencies and with Arch Coal, who is also currently planning water resource baseline monitoring. Benefits of this study also depend upon how the results are disseminated and communicated to stakeholders and applied in the decision making process. In order to

realize the long term benefit, additional funding will be necessary for MBMG to continue water resource monitoring in the Otter Creek watershed in the future.

The project will create a few new temporary summer jobs for college students hired by MBMG. The majority of economic benefit will be realized by MBMG and the private drilling company selected to drill the monitoring wells.

Technical Assessment

The application adequately defined the problem and reasonably documented the importance of obtaining baseline information prior to coal development. The goal and the objectives of the project were clearly stated. However, limited alternatives analysis was provided. A secondary reviewer commented on the value of unbiased third party baseline data and that the preferred alternative is the best option presented in the application to meet that need.

The MBMG currently operates the PRB regional groundwater monitoring network. This study would expand the area of that network, but exactly how and where are unclear. Data and interpretations from this study would be incorporated directly into the existing annual PRB regional groundwater monitoring report for dissemination to the public. The application did not describe the extent of the existing PRB monitoring network nor details of how data are quality controlled, interpreted, and presented. Monitoring activities in this study will include collecting water-level, water-quality, and flow data from selected domestic and stock wells, springs and streams in the Otter Creek watershed. Data will also be collected from ten new dedicated monitoring wells, which will be installed in the Knobloch coal aquifer and overlying and underlying aquifer units as part of this project.

A number of concerns about the project design should be addressed prior to funding. First, the problem should be defined in the context of the needs of the regulating agencies to ensure that the information collected is useful in making decisions. A goal to inform decision makers by providing the necessary data to be used to protect water resources from impacts of developing the Otter Creek coal tracks is recommended. The corresponding objective would be to collaborate with regulatory agencies to develop a monitoring and assessment plan that ensures the information collected will support decisions on permitting and development of the Otter Creek tracks.

Second, the discussion of the hydrologic setting and identified targets for monitoring are limited. Much more information is needed before appropriate monitoring sites can be identified. Given the high profile of this mine project and the extent of the area under influence, much of it hydrologically sensitive, more monitoring sites than the 30 proposed in the application will be needed.

Third, the study proposes only one round of water quality sampling and analysis. This frequency of water quality sampling and analysis is inadequate to meet the project goal of characterizing baseline hydrologic and geochemical conditions. Water quality sampling and analysis should be, at a minimum, conducted quarterly for one year to evaluate seasonal variations. During project monitoring, careful documentation of the conditions at each private domestic and stock wells must be included. Water levels taken at wells currently in use may not represent the actual potentiometric surface due to well pumping and multiple completions and therefore should not be used in drawing potentiometric surfaces. The application did not describe data quality review, data interpretation, and data dissemination and community outreach. In addition to presenting data and interpretations in the annual PRB regional groundwater monitoring report, the MBMG should ensure that all data are available in the public domain and included in the Groundwater Information Center database.

In addition, the timing and schedule of the proposed project is of concern. The proposal stated that "the project will be completed within 24 months of the project start-date" and that "data and interpretations published as a result of this proposed project will allow the coal company and the state regulators to more effectively focus the mine monitoring program to better fit the needs of mine permitting and to better address concerns of citizens." Arch Coal is developing a plan for baseline monitoring that it expects to submit to DEQ in late 2010. As the permit application is on an accelerated schedule for submission by

Arch Coal, baseline monitoring is anticipated to be implemented by Arch shortly after the proposed plan is approved (probably early 2011). If the MBMG study is not completed until 2013 it would not provide baseline/background data helpful in the design and development of a mine or monitoring plan. There also appears to have been a lack of coordination between MBMG and the government agencies and other parties interested in monitoring in the Otter Creek area. MBMG has not been in touch with the regulatory program within DEQ that will oversee permitting of the Otter Creek Mine permit. Recent meetings between Arch Coal and DEQ did not indicate that MBMG had contacted Arch or their contractors.

Financial Assessment

Budget Item	RDGP Grant	Match	Total
Salaries and Wages	\$58,134	\$0	\$58,134
Fringe Benefits	\$28,773	\$0	\$28,773
Contracted Services	\$105,850	\$0	\$105,850
Equipment	\$16,250	\$0	\$16,250
Supplies	\$1,850	\$0	\$1,850
Communications	\$550	\$0	\$550
Travel	\$7,030	\$0	\$7,030
Miscellaneous	\$15,560	\$47,544	\$63,104
Rent and Utilities	\$5,500	\$0	\$5,500
Total	\$239,496	\$47,544	\$287,040

The proposed budget appears reasonable and complete. Project funding depends upon receiving the RDGP grant. In-kind match from the Powder River CD is provided in sharing the cost to administer the grant. Grant administration is shown as a "miscellaneous" budget item and is discussed in the application. The proposed costs are reasonable however the exact amount budgeted for grant administration is unclear. MBMG is providing funding for the project through indirect costs associated with Montana Tech administration of salary and benefits in the amount of \$37,544. The applicant's contribution is \$10,000.

Other concerns include the level of budget detail. The application did not break down labor cost between tasks or into specific activities for each task. The budget is unclear how ten months and eight months, respectively, of time over two years will be used by the project hydrogeologist and field technicians. Itemized lists of supplies and rental field equipment are not provided. The proposed budget will allow installation of ten dedicated monitoring wells and one round of water quality monitoring and analysis at a total of 30 monitoring sites. In order to achieve the project goal of establishing hydrologic and geochemical baseline conditions, a minimum of one year of quarterly monitoring is necessary. Since monthly monitoring of the sites is proposed, quarterly sampling of the sites could be achieved for one year through additional funding or by budget prioritization. The additional cost would be approximately \$18,600 for analytical and shipping costs. Additional funding sources will be needed to continue long term monitoring of the watershed, where much of the project benefit will be realized.

Environmental Evaluation

There are no environmental concerns in completing this project. Short term impacts will occur during drilling. A potentially anticipated impact would be associated with access. Monitoring sites are typically located along established roads/routes, so there should be little impacts from driving on undisturbed ground.

For More Information

The project abstract, prepared by the applicant, can be found at:
<http://dnrc.mt.gov/cadd/ResDevBureau/2010abstracts/2010rdg/default.asp>

Funding Recommendation

The DNRC does not recommend funding for this project.

The project had an inadequate scope of work, administration, budget, and funding package. Baseline water quality information will be collected by regulating agencies and Arch Coal. The project timeline would not provide useful baseline data.

CHAPTER III

STATUS REPORT OF 2005 - 2009 PROJECTS

This chapter briefly summarizes the status (as of October 30, 2010) of active projects and projects completed since preparation of the January 2009 Legislative Report. Projects are grouped according to the year in which they received legislative approval; within each grouping, projects are presented in the order of their relative funding priority.

Projects Approved by the 2009 Legislature

1. MT Board of Oil and Gas Conservation / 2009 Southern District Orphaned Well Plug and Abandonment, and Site Restoration

Contract has been awarded. Work will begin fall 2010 or in spring 2011. BOGC is identifying additional wells to add to the project because the successful bid came in significantly less than anticipated.

2. MT Board of Oil and Gas Conservation / 2009 Northern District Orphaned Well Plug and Abandonment, and Site Restoration

Contract has been awarded. Work will begin fall 2010 or in spring 2011. BOGC is identifying additional wells to add to the project because the successful bid came in significantly less than anticipated.

3. Shelby, City of / Shelby Refinery

This project was to clean up petroleum-contaminated soils at the abandoned Shelby refinery in Toole County. During this project 38,358 tons of petroleum-contaminated soils were excavated and disposed of. Further contaminated soils were encountered during the project and are estimated at 7,500 cy. Shelby has applied to the Reclamation Development Grants Program (RDGP) in 2010 for additional funding to complete the site cleanup.

4. Missoula County / St. Louis Creek Mine Reclamation

The St. Louis Mine Reclamation project is a partnership between Missoula County, Trout Unlimited, and USFS. The project goals are to address the environmental problems associated with the Joe Wallit Mine and its effects on the East Fork of St. Louis Creek and St. Louis Creek. The project is expected to be completed by fall 2010.

5. MT Department of Environmental Quality / Spring Meadow Lake Reclamation

The Spring Meadow Lake State Park project removed about 34,000 cy of tailings and contaminated soils from an urban state park with 85,000 visitors annually. The project was completed in May 2010.

6. Cascade County Commission / County Wood Shops Remediation of Wood Treatment Preservatives

The county shops area soils and groundwater are contaminated with PCP and dioxin/furan. Cascade County used PCP, a common wood preservative, to treat bridge timbers before installation. The proposed remediation project consists of excavating and removing impacted soils, installing a groundwater collection and conveyance system, and installing a groundwater pumping and treatment system. The design specifications and contract documents have been finalized, a contractor has been selected, and work will commence in fall 2010.

7. MT Department of Environmental Quality / McLaren Tailings Reclamation Project

This project in Park County is to reclaim about 20 acres and 267,200 cy of mining impacted soil and tailings. Mining-impacted material will be removed from stream channels and adjacent areas and placed into an on-site, unlined repository. The contaminated material will then be covered with an 18-inch multilayered cap to prevent precipitation infiltration and percolation. Work performed at the McLaren project in fall 2009 included the installation of 17 groundwater dewatering wells that will facilitate the excavation of water-saturated tailings and contaminated sediments. Site reclamation work performed during 2010 included the construction of two temporary bridges over Soda Butte Creek for project access and hauling of mine wastes, excavation of the onsite repository, installation of sediment control measures, stabilization of tailings using lime, salvage and stockpiling of cover soils, and partial construction of the water treatment plant on site.

8. Lewistown, City of / Reclamation of Berg Lumber Mill Site

This project is to clean up soils contaminated with PCP, dioxin/furan, and petroleum at the BLMS in Lewistown. The primary goal of this project is to reduce or eliminate risks to human health and the environment at the BLMS, allowing the site to be transferred to the City of Lewistown. Lewistown submitted a final cleanup plan to the DEQ in July 2010. Work will commence after DEQ approval of the work plan.

9. Ryegate, Town of / Former Ryegate Conoco

Petroleum products released from Conoco's underground storage tank have contaminated soil and groundwater at the site. Major tasks completed so far are building demolition and disposal, soil excavation and land farming locally, and well installation. Wells are being sampled. Site remediation will continue in 2011.

10. Park County / Fleshman Creek Urban Restoration

The primary goal of this project is to restore Fleshman Creek to a more natural and flood-resistant state via four primary objectives: (1) mitigate risks to property and life associated with flooding from Fleshman Creek; (2) improve water quality; (3) improve water quantity; and (4) repair and restore riparian and aquatic habitat within the Fleshman Creek corridor. Park County received its funding from FEMA in summer 2010 and is in the process of commencing the project.

11. Butte-Silver Bow City-County Government / Butte Mining District Reclamation and Protection

This project is to preserve and restore the physical infrastructure of the historic mine yards in the Butte Mining District. In summer 2010 construction repair work continued on roofs, windows, and stairs of historic mining structures. The project is on schedule for completion in December 2010.

12. Missoula County / Ninemile Creek Mining District Reclamation

Historic placer gold mining in the Ninemile Creek watershed has resulted in stream channel modifications that include dredge pools, tailings piles, and steep headcuts and banks. A new stream channel has been cut in Mattie V Creek and a new flood plain has been constructed. Work is expected to be completed in fall 2010. Survey and design work at the Housum Placer mine will take place in fall 2010.

13. MT Department of Environmental Quality / Beal Mountain Mine, Waste Rock Dump Soil Cover

This project is to place soil on the upper portion of the waste rock dump at the Beal Mountain Mine. It is an incremental action with the ultimate goal to discontinue ongoing water treatment operations at mine. Construction was completed in summer and fall 2010. Construction on a drainage ditch will be completed in 2011.

14. Lewis and Clark Conservation District / York Gulch Old Amber Mine Reclamation

This project funded several reclamation tasks on the York Gulch Old Amber Mine property. Reclamation of an estimated 0.4 acres and 1,500 cy of mining-impacted soil and tailings material included removal of tailings material from valley bottoms and the mine area, removal of a small mill site, backfill of two placer pits, and closure of three mine adits. The project was completed in May 2010.

15. Ruby Valley Conservation District / Big Hole Cooperative Ditch Improvement Project

The Big Hole Ditch is a very large diversion, used by 22 irrigators on about 4,000 acres. This ditch intercepts water from the BHR and discharges it into the Beaverhead River. The project is to replace the rock diversion structure and an inoperable radial headgate and install low-flow weirs in the BHR. The headgate has been replaced and weirs were installed. The project is expected to be complete in fall 2010.

16. MT Department of Natural Resources and Conservation / Monitoring Coalbed Methane Development Effects of Surface Water Quality of the Tongue and Powder River Basins

This project is a study being conducted by the USGS to evaluate impacts of CBM development on water resources and fisheries in the Tongue and PRB so that regulatory agencies can make informed water management decisions about agricultural applications and CBM produced water discharge. The project commenced in summer 2009 and will continue through 2011.

17. Flathead Basin Commission / Flathead Regional LiDAR Mapping Project

This project is to produce detailed maps of the Flathead region for hazard planning and natural resource development. LiDAR data were collected, processed and submitted. The project sponsor is now working with the NRIS to make the data available electronically to the public. The project is expected to be completed in fall 2010.

18. Jefferson County / Groundwater Quality Assessment with and Emphasis on Radionuclides

This project is to conduct a groundwater monitoring program to assess the occurrence and source of radioactive elements, and provide preliminary information regarding septic-related contaminants. These radionuclides likely come from the granitic rocks of the Boulder Batholith. The batholith, intensively prospected for uranium in the 1950s, underlies much of Jefferson County and some surrounding areas. Wells have been selected and sampled. The project is on track to be completed in spring 2012.

19. Meagher County Conservation District / Hydrologic Framework and Water Budget of the Upper Smith River Watershed

The Meagher County CD, in cooperation with the USGS, began a study in 2006 to better understand the groundwater-surface water interaction in the Upper Smith River Watershed. This project is to develop a hydrologic framework and associated water budget for the Upper Smith River Watershed using data collected in the 2006 study and data collected during this study. The USGS has been collecting groundwater and surface water and other data for the watershed model. The project is expected to be completed by fall 2012.

20. Custer County Conservation District / Yellowstone River Riparian Restoration

The YRCDC is addressing salt cedar and Russian olive infestations along 560 miles of the Yellowstone River from the Yellowstone Park border near Gardiner, Montana, to its confluence with the Missouri River near Fairview, North Dakota. The project is divided into six tasks that run concurrently. The project is expected to be completed in summer 2012.

21. Cascade County Commission / Sustainable Water Supplies from the Madison Aquifer, Central Montana

This project is to conduct a detailed groundwater study of the Madison aquifer across the major recharge and discharge areas in and around the Little Belt Mountains and the Big Snowy Mountains to enhance responsible groundwater use and protection. This project includes estimation of a water budget for the Madison aquifer that includes recharge (precipitation, stream loss, and overlying aquifer seepage), and discharge (springs, wells, and groundwater outflow from the study area). This project was contracted in May 2010. The project is scheduled to be completed by December 2011.

22. Butte Silverbow City-County Government / Irrigation Demonstration Project for Butte Acidic Mine Waters – On-site Treatment and Resource Recovery

The project is to demonstrate a mobile water treatment system that can successfully treat groundwater from the Belmont Mine workings to meet applicable irrigation standards; to characterize the water in other mine workings to determine whether this concept can be transferred to other sites in Butte; and to explore the feasibility of recovering geothermal heat from the elevated temperature water at the Belmont mine for space heating in nearby buildings. This project was contracted in April 2010. A contractor has been selected and has started to build water treatment equipment. The project is scheduled to be completed in spring 2012.

Projects Approved by the 2007 Legislature

1. MT Board of Oil and Gas Conservation / 2007 Northern District Orphaned Well Plug and Abandonment, and Site Restoration

This project proposed to plug 15 oil and gas wells in Glacier County. All wells that were going to be plugged are completed; a pit in Gypsy Basin will be reclaimed in fall 2010 or spring 2011.

2. MT Board of Oil and Gas Conservation / 2007 Southern District Orphaned Well Plug and Abandonment, and Site Restoration

This project proposed to plug seven oil and gas wells in Big Horn, Musselshell, and Yellowstone counties. The plugging contractor has been selected and a contract has been awarded. The work is completed. A final report is expected in fall 2010.

3. MT Department of Environmental Quality / Snowshoe Mine Reclamation Project

Water quality in Snowshoe Creek, a tributary to Big Cherry Creek and the Kootenai River, was impacted by mine wastes from the Snowshoe Mine. After three years of construction, 65,000 cy of tailings and waste rock adjacent to Snowshoe Creek were removed from 13 acres of streambank and floodplain. Wastes were placed in a constructed engineered repository. The project is complete and a Final Report is expected in fall 2010.

4. MT Department of Environmental Quality / Bald Butte Mine and Millsite Reclamation Project

The goal of the Bald Butte Mine and Millsite Reclamation Project is to protect human health and the environment by removing the tailings and waste rock along Dog Creek and its tributaries and then placing this contaminated material in an engineered mine waste repository. Construction began in July 2010. Excavation and construction of the waste repository and haul road improvements have been completed. Excavation of mine tailings has begun.

5. MT Department of Natural Resources and Conservation / St. Mary Facilities Rehabilitation

The purpose of this grant is to continue the State of Montana's efforts to rehabilitate and construct the St. Mary diversion structure and conveyance works before the system catastrophically fails. The contract was signed in October 2008. Work will continue on the horizontal drain program, catastrophic situation planning, hydrologic modeling, and other tasks in 2011.

6. Powell County / Milwaukee Roundhouse Voluntary Cleanup

The project was advertised, but bids exceeded available funds. Powell County scaled the project down to allow implementation of the project with the available dollars. Work is expected to commence in October 2010 and be completed by the end of November.

7. Central Montana Water Authority / Utica Well 2

This project is to drill a regional municipal water production well in the Madison Limestone to provide clean drinking water to eight communities in a five county area. This project was delayed while the USBR developed rules for considering grant requests. The funding package is now being finalized and the project is ready to contract in fall 2010.

8. MT Board of Oil and Gas Conservation / Southern District Tank Battery Cleanup

This grant provides funding for reclamation of an abandoned tank battery site northeast of Roundup. The two – acre site contained an estimated 6,600 cy of contaminated soil material. During excavation an additional 9,000 cy of contaminated soil were discovered. BOGC has requested additional funds to complete site cleanup during the 2011 RDGP grant cycle.

9. Meagher County Conservation District / Hydrologic Investigation of the Smith River Watershed

This project is an investigation of groundwater and surface water interaction within the Upper Smith River Watershed. The USGS is conducting the study and will report study results and recommendations in a draft report in March 2011. The final report will be published in September 2011.

10. MT Department of Environmental Quality / Belt Acid Mine Drainage Mitigation

The Belt AMD Mitigation Project included efforts to open the Anaconda Coal mine workings for the purpose of identifying areas in the mine where groundwater enters. This effort has been cancelled due to safety concerns within the mine and plans are being developed to re-close the mine entry portal. DEQ produced an initial design for excavation of the buried coal waste within the Belt Creek floodplain, and removing these wastes to an engineered repository on DEQ owned property on the uplands over-looking the Belt Creek drainage. Because of the high cost (engineer's estimate of \$9.3 million) for this reclamation phase, this design is currently being evaluated for alternative methods.

11. MT Department of Environmental Quality / Swift Gulch Placer Tailings and Wetland Establishment

Engineering design work construction began in 2008. Assessments of design flows, peak flows and iron loads in Swift Gulch were completed as part of the design work. Five settling ponds have been constructed within and adjacent to Swift Gulch. Dredge tailings deposits within and adjacent to the work area have been re-contoured and seeded. The project has been completed.

12. Broadwater Conservation District / Whites Gulch Reclamation Fish Barrier Project

After funding issues due to the increase in building and construction costs were resolved, this project was completed successfully.

13. MT Department of Environmental Quality / Landusky Mine – Characterization of Surface Water/Groundwater Interactions in Swift Gulch and the Adjacent Landusky Pit Complex

Characterization of stream flow in Swift Gulch occurred in 2007 and 2008. Activities included a tracer injection / synoptic sampling survey conducted in cooperation with Montana Tech to define gaining and losing reaches of the stream and variations in iron speciation throughout the length of Swift Creek, installation of flumes at key locations along the stream and frequent measurement of flow at these locations, and diurnal sampling to assess daily variations in stream chemistry. Five monitoring wells were completed between the Landusky mine pit and Swift Gulch in 2008. The wells significantly helped to characterize the geology and hydrochemistry of the shear zones and then were used for aquifer testing during August. A geophysical survey of the area was performed in 2008. Data collected during these studies was analyzed, and a final report was prepared in 2009.

14. Big Horn Conservation District / Montana Regional Coalbed Methane

The purpose of this project is to provide groundwater data needed to support the Montana CBM Protection Act and other CBM issues. The Montana Legislature has given jurisdiction of the CBM Protection Act to conservation districts. This project will help conservation districts fulfill this mandate. The CBM monitoring network was maintained and monitored by trained and equipped individual landowners to monitor their private wells and springs.

All data are in the Montana Ground-Water Information Center (GWIC) and are available to the public. There have been three CBM meetings held in the area, the most recent one landowner/operator training meeting in Lame Deer with nine in attendance. This project was completed and a final report is expected in fall 2010.

15. Gallatin Local Water Quality District / Assessment and Distribution of Pharmaceuticals

The GLWQD and the MBMG collected samples of wastewater, surface and groundwater for this project and analyzed the samples for pharmaceuticals and endocrine system disruptors. The goals of the project were to: (1) document and quantify the ability of different wastewater treatment systems used in the Gallatin Valley to remove these compounds; (2) quantify the loading of these compounds to surface or groundwater from treated effluent; (3) determine the extent and magnitude of contamination in surface and groundwater in the Gallatin Valley; and (4) recommend options for reducing contamination of state waters by these compounds. The project was completed in July 2010.

16. Flathead Basin Commission / British Columbia - Montana Action Plan

The purpose of this project is to develop a monitoring plan for the North Fork Flathead River Basin and address potential impacts from a proposed coal mine located in the British Columbia Flathead River Basin near the Montana border. The FBC has used this grant to characterize the quality of natural resources in the Basin. Work on this project is expected to be complete by June 30, 2011.

17. MT Tech of the University of Montana / Butte Native Plant Propagation Nursery

The project goal was to provide plants for re-establishing native species diversity in Butte open spaces. Montana Tech collected seed from about 40 species of forbs that grow on the Butte Hill. The vast majority of these species are not available from commercial growers. Germanization was attempted on as many of these as possible with follow up planting of seed orchards at Tech. The project was completed in 2009.

Projects approved by the 2005 Legislature

1. MT Board of Oil and Gas Conservation / 2005 Eastern District Well Plug and Abandonment and Site Restoration

This project proposed to plug 27 oil and gas wells in Dawson, McCone, Phillips, Richland, and Valley counties. The grant is now completed.

2. MT Board of Oil and Gas Conservation / 2005 Northern District Well Plug and Abandonment and Site Restoration

This project was to plug 20 oil and gas wells in Toole and Glacier counties. The grant is now completed.

3. MT Department of Environmental Quality / Bluebird Mine Reclamation Project

Work on the Bluebird Mine Reclamation Project has been completed.

4. MT Department of Environmental Quality / Frohner Mine Reclamation Project

The Frohner Mine is located 12 miles Southwest of Helena in the Lump Gulch drainage, a tributary to Prickly Pear Creek. The site had multiple waste rock dumps and a tailings pond. The 10,000 cy of mine waste on the site exceeds risk-based cleanup guidelines for arsenic, lead, mercury, and silver. Water discharges from the site have a pH of 2.2 and are contaminated with metals due to leaching through the exposed mine wastes.

DEQ conducted a repository siting investigation and is presently looking into the feasibility of combining wastes from the Frohner Mine with those from the Nellie Grant Mine in one repository. The project will proceed after DEQ decide on a suitable repository.

5. MT Department of Environmental Quality / Buckeye Mine Reclamation Project

Work on the Buckeye Mine Reclamation Project in Madison County is completed.

6. Lewistown, City of / Reclamation of Brewery Flats on Big Spring Creek

This project has been successfully completed. Metal-contaminated soils have been removed and the area restored. The site, now a suburban park adjacent to Big Spring Creek, is widely used by local residents.

7. MT Department of Natural Resources and Conservation / St. Mary Studies and Design

The purpose of this project is to provide the necessary administrative, technical, and funding support to facilitate the process of rehabilitating the St. Mary Diversion Facilities by securing completion of the studies and preliminary designs necessary to obtain Congressional authorization and appropriation of construction funds. Most tasks have been completed, including the geotechnical investigation, a PER, an economic study, a basin hydrologic study, hydrologic modeling, and a survey of the St. Mary Canal. The St. Mary Rehabilitation Working Group meets regularly to advise the state on appropriate strategy and to monitor progress. Tasks to be completed include a historical article and other administrative tasks. The project is expected to be complete in summer 2011.

8. Butte-Silver Bow Local Government / Belmont Shaft Failure and Subsidence Mitigation

This project mitigates the imminent public safety hazards associated with five identified major mine shaft failures in Butte. Mitigation work began in January 2006. Butte-Silver Bow has selected a contractor, the contractor has started work on the shaft closures, and all work is expected to be complete this construction season. Butte-Silver Bow continues to monitor other subsidence problems in Butte and take mitigation measures as necessary. The project is expected to be complete by fall 2011.

9. Pondera County / Oil and Gas Well Plug and Abandonment Project

This project cost-shared the plugging of abandoned oil and gas wells with small operators in Pondera County. The project has been completed.

10. Custer County Conservation District / Yellowstone River Resource Conservation Project

This project was contracted in May 2006. The YRCDC used these grant funds to study river channel stability, sedimentation, and erosion, and compare these channel processes for selected reaches of the river; assemble and process historic aerial photography into GIS for geomorphic study and analysis; and conduct a cumulative effects assessment. The project is now complete and a final report is expected in fall 2010.

11. Teton County / Oil and Gas Well Plug and Abandonment

This project cost-shared the plugging of abandoned oil and gas wells with small operators in Teton County. The project has been completed.

12. Toole County / Plugging and Abandonment Aid to Small, Operators

This project cost shares the cost of plugging and abandoning oil and gas wells with small operators. The project was completed in May 2010.

13. MT Department of Environmental Quality / Zortman Mine Reclamation- Completion of Preferred Alternative Z-6

The revised reclamation plan called for re-direction of storm water from the Alder Gulch waste dump, lining the dump, and topsoiling. The project has been completed.

14. Butte-Silver Bow Local Government / Excelsior Reclamation

This project reclaimed about four acres of land impacted by mineral development in the urban corridor of Butte. This project is complete.

15. Powell County / Garrison Wetland Reclamation and Redevelopment

This project is to clean up the former Garrison Phosphate Mill site as a wetlands habitat, viewing area, and outdoor classroom. The county is working with a consultant to develop plans for this site and coordinate with DEQ. Waste has been removed. Additional fluoride sampling is needed. The project is expected to be complete in fall 2010.

16. MT Department of Environmental Quality / Former Harlem Equity Co-Op Bulk Plant Cleanup

This project was to remove petroleum-contaminated soil and continue groundwater monitoring. Soil removal occurred in fall 2005. Monitoring is now completed and the final report is expected in fall 2010.

CHAPTER IV

Reclamation and Development Grants Program – Project Planning Grants

Program Information

The 2009 Legislature authorized \$800,000 for RDGP project planning grants. These grants are intended to assist local governments with the planning and design of technically feasible natural resource projects eligible for funding consideration under the RDGP. Planning grant funds must be used primarily for contracted consulting or engineering services. Because all eligible RDGPs were funded by the appropriation, the Legislature added a provision giving the DNRC the authority to apply reverted funds from grant projects toward any other program authorized in House Bill 6 (RRGL Program) and House Bill 7 (RDGP).

Grant applications were accepted quarterly. As of fall 2010, the planning grant funding was used to assist more than 17 projects across Montana (Table 2). Review and ranking methodology was patterned and conducted very similar to the RDGP projects grant program. Of the 17 planning grants, eight planning projects resulted in an application for a RDGP project grant by the May 15, 2010 deadline. Some of the projects are still in planning stages and do not expect to submit applications for RDGP project grants until the 2012 cycle. Two of the project applications submitted in 2010 were funded with planning grants from the 2007 planning grant cycle. Projects submitted by applicants that received a planning grant tended to rank higher relative to those that did not seek a planning grant. A final grant cycle is planned for fall 2010.

Based on the comments received from the applicants, DNRC concluded that the project planning grants have been hugely successful. DNRC will continue to refine the basic structure of the planning grant program regarding funding amounts, application categories, and frequency of cycles based on this input and local needs. Funding of the planning grant projects has proven invaluable for applicants in preparing and submitting a high quality and competitive grant application under the major RDGP. DNRC intends to seek planning grant re-authorization from the 2011 Legislature.

Table 2 Project Planning Grants Awarded During the 2011 Biennium

Project Sponsor	Project Title	Grant Amount
Crow Tribe of Indians	Little Bighorn River Comprehensive Restoration Planning	\$ 50,000
Fort Peck Assiniboine & Sioux Tribes	Work Plan to Reclaim Philip Red Eagle 2-25 SWD Saltwater Injection Well	11,410
Petroleum County CD	Horse Creek Coulee Site Evaluation and Feasibility Report	20,000
Missoula, City of	Missoula Sawmill Site Wood Waste Reclamation	50,000
Whitefish, City of	Whitefish Railway District Contaminant Assessment	49,772
Ruby Valley CD	Alder Creek & Virginia City Ponds Reclamation Plan	49,660
Butte-Silver Bow	National Summit of Mining Communities	50,000
Missoula County Rural Initiatives	Twin Creek Mine Reclamation	36,204
Butte-Silver Bow	Water Supply Study for South Butte	50,000
Butte-Silver Bow	Mining City Neighborhood Planning	47,400
Black Eagle Water & Sewer District	Soils Assessment for Black Eagle Phase 2 Water Main Replacement	49,723
Sanders County	Managing Invasive Aquatic Weeds in Noxon and Cabinet Reservoirs	50,000
Sand Coulee Water District	Sand Coulee Water System Improvements	30,000
Missoula County Rural Initiatives	Kennedy Creek Mine Reclamation	50,000
Granite County	Forest Rose Mine Reclamation	35,150
Anaconda – Deerlodge County	Anaconda Superfund Trails Remediation	50,000
Mile High CD	Riparian Restoration Plan for Brown's Gulch	44,805
Conservation Districts	Conservation District Project Planning Assistance	15,000
Liberty CD	Project Development & Grant Administration	10,000
	TOTAL	\$ 749,124

2011

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